

Tilburg University

Developing a sense of privacy

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Publication date:
2014

Document Version
Publisher's PDF, also known as Version of record

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):
Steijn, W. M. P. (2014). *Developing a sense of privacy: An investigation of privacy and the differences between young and old in the context of social network sites*. [Doctoral Thesis, Tilburg University]. [s.n.].

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DEVELOPING A SENSE OF PRIVACY

*An investigation of privacy and the differences between
young and old in the context of social network sites.*

WOUTER M.P. STEIJN

Developing a sense of privacy

ISBN/EAN: 978-90-822525-0-7

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Printed by Drukkerij Riezebos, De Lier

Cover, design & lay-out by Paul Willemse

This dissertation is part of the *Social Dimensions of Privacy* project supported by
The Netherlands Organisation of Scientific Research (Grant Number: 360 20 241).

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PROEFSCHRIFT

ter verkrijging van de graad van doctor aan Tilburg University
op gezag van de rector magnificus, prof. dr. Ph. Eijlander, in
het openbaar te verdedigen ten overstaan van een door het
college voor promoties aangewezen commissie in de aula van
de Universiteit op vrijdag 5 september 2014 om 10.15 uur door

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te Rijswijk*

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Ik draag dit proefschrift op aan mijn vrouw, Ilja. Zij stond altijd klaar om mij op te vangen als ik het zwaar had, maar ook om mij weer aan het werk te zetten als het even niet wilde lukken. Zonder jouw constante steun en liefde was het mij nooit gelukt. Bedankt.

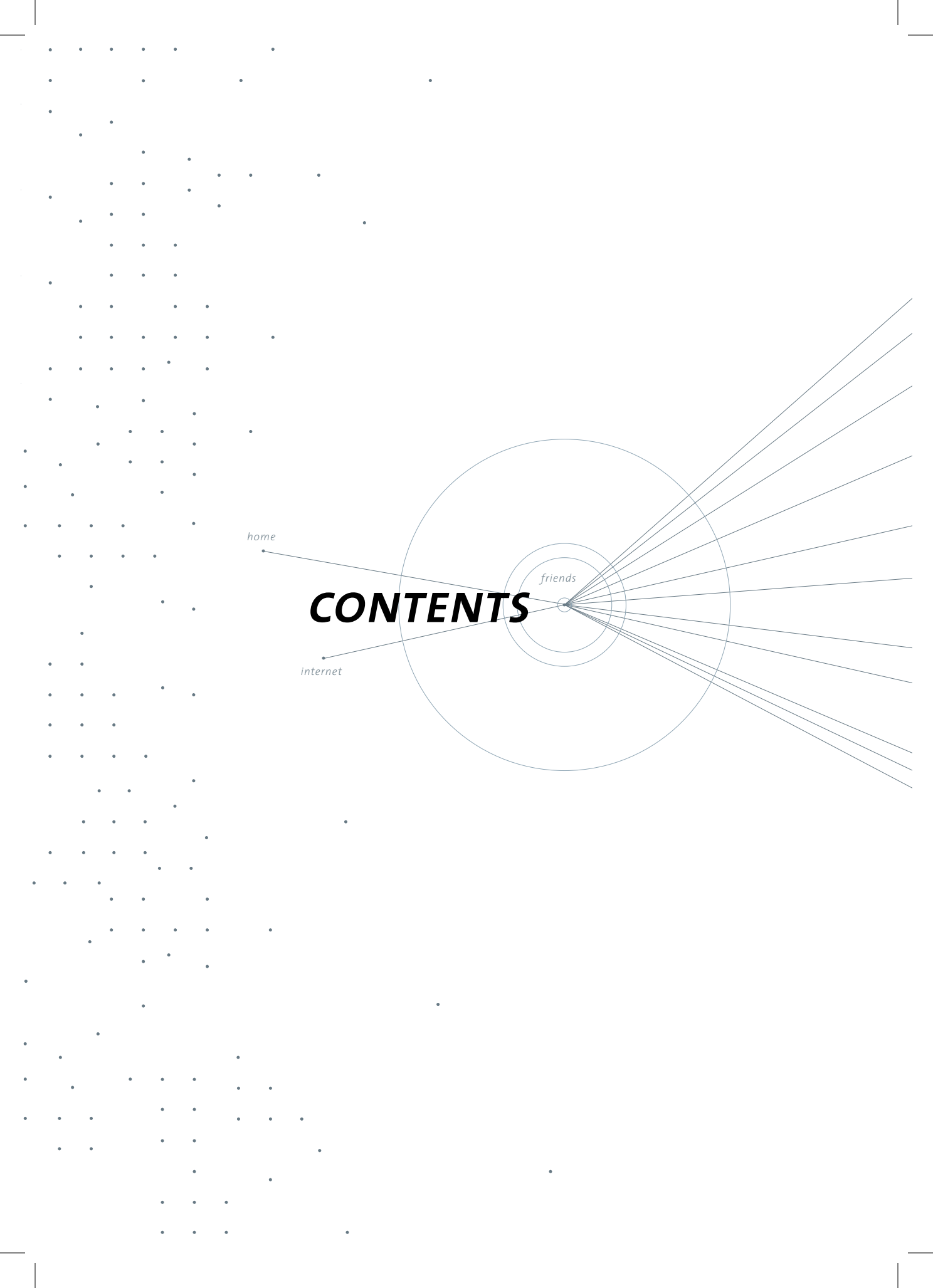


CONTENTS

home

internet

friends



• 09 – 27		Chapter 1	General introduction.
• 29 – 43		Chapter 2	Information sharing and relationships on social network sites.
• 45 – 69		Chapter 3	A developmental perspective regarding the behaviour of adolescents, young adults, and adults on social network sites.
• 71 – 93		Chapter 4	Privacy under construction: a developmental perspective regarding the different perceptions of privacy between younger and older individuals.
• 95 – 116		Chapter 5	Why concern regarding privacy differs: the influence of age and (non-) participation on Facebook.
• 119 – 145		Chapter 6	The cost of using Facebook: assigning value to privacy protection on social network sites against data mining, identity theft, and social conflict.
• 147 – 173		Chapter 7	The role of informational norms on social network sites.
• 175 – 214		Chapter 8	General discussion.
• 217 – 231			Dutch Summary (Samenvatting).
• 233 – 235			Acknowledgements (Dankwoord).
• 237			About the author.

CHAPTER 1

General introduction

GENERAL INTRODUCTION

Privacy is a current topic in both academic and societal debates. This has been in response to the increasing role that the internet plays in everyday life. Our dependence on online services is increasing and simultaneously, threats to our informational privacy have multiplied online in the form of targeted advertising, cookies tracking online behaviour, data mining, and possible identity theft (Andrews, 2012; Noda, 2009; Roosendaal, 2012; Roosendaal, 2013; Timmer, 2009). Here, we focus on the behaviour and privacy issues that can be linked to on one particular online service that is especially popular: social network sites (SNSs).

SNSs, such as Facebook or Hyves, have assumed an important place in the lives of many people. SNSs that focus on social relationships and friendships appear most popular and Facebook leads the pack with over 1 billion users¹. Originally intended for students, individuals of all ages make use of Facebook today (Hampton, Goulet, Rainie, & Purcell, 2011; Lenhart, Purcell, Smith, & Zickuhr, 2010). In light of the popularity of SNSs, we investigate the current state of privacy appreciation with regard to individuals' SNS use. Specifically, we will study the differences between younger and older individuals as they are often found to differ in both their behaviour and their privacy concerns.

In regard to young people's privacy appreciation, two conflicting lines of reasoning can be identified. On the one hand, there is one stream of thought that argues that young people value their privacy (e.g., boyd & Marwick, 2011; Livingstone, 2008; Raynes-Goldie, 2010). On the other hand, however, young people have acquired a reputation to value privacy less compared to previous generations in popular discourse (e.g., Nussbaum, 2007).

Several observations concerning the online behaviour of young people are indeed cause for concern from a privacy perspective. Young people share great deal of personal information with their contacts on SNSs without always adjusting the privacy settings to protect this information (Acquisti & Gross, 2006; Debatin, Lovejoy, Horn, & Hughes, 2009; Govani & Pashley, 2005). In addition, the press has reported numerous incidents that have shown the potential severity of online privacy breaches, further fuelling the notion that young people have little regard for their online privacy (e.g., Ferenstein, 2013; Levy, 2009; O'Dell, 2011). Finally, despite the vulnerability of their online privacy resulting from their behaviour, most studies show that younger people are less concerned about their privacy when compared to older people, (Fox et al., 2000; "Online privacy worries increase with age", 2009; Paine, Reips, Stieger, Joinson & Buchanan, 2007; Zukowski & Brown, 2007).

¹ Statistic retrieved from *newsroom.fb.com.10*).

When these factors are combined- the intensive behaviour on SNSs, the lower level of concern for their privacy, and the suboptimal use of privacy settings by young people- this could lead to a situation in which there are those who say that privacy no longer holds much value in society. For example, to quote Mark Zuckerberg, CEO of Facebook: “People have really gotten comfortable not only sharing more information and different kinds, but more openly and with more people. That social norm is just something that has evolved over time” (Johnson, 2010). This statement implies that the observed behaviour and the lack of concern among youth are generational characteristics (see also, Nussbaum, 2007); the current young generation values privacy less compared to previous generations their age. Yet, this notion has ignored the growing field of studies which claims that young people do in fact value privacy (boyd & Marwick, 2011; Livingstone, 2008; Raynes-Goldie, 2010).

In this dissertation we will investigate the differences in online behaviour and privacy concerns between young and old. Rather than assuming that the risky behaviour and low level of concern for privacy often observed among young adults are characteristics of a new generation, we will hypothesize that these behaviours and privacy concerns may, to some extent, be related to the developmental needs and goals of young people (Christofides, Muise, & Desmarais, 2012; Peter & Valkenburg, 2011; Subrahmanyam, Smahel, & Greenfield, 2006). However, we cannot yet provide conclusive evidence for causal relationships between developmental factors and online behaviour or privacy concerns in this dissertation. Instead, our goal is to explore whether it is feasible that a developmental perspective can be used to help understand the online behaviour and privacy concerns of individuals. In doing so, we hope to advance the privacy debate by providing new insights into the privacy appreciation of both young and old, and to inspire future researchers to investigate this issue further.

It is important to distinguish which characteristics that we can observe today differ between young and old and thus signify a generational difference and which characteristics are related to developmental differences. In discussions regarding the online behaviour of young people, they are often labelled in generational terms, e.g. as “digital natives” or “millenials” (e.g., Howe & Strauss, 2000; Nussbaum, 2007; Palfrey & Gasser, 2008; Prensky, 2001). Such labels not only ignore the diversity between children (Marwick, Diaz, & Palfrey, 2010), but they also overlook the developmental characteristics of this age group. We will explore the possible relationships between developmental goals and behaviour on SNSs and privacy concerns in this dissertation. The feasibility of using a developmen-

tal perspective to understand online behaviour and privacy concerns, and the differences between young and old, has important implications when attempting to understand the overall privacy appreciation in society, and among young people specifically. Therefore, we address the following exploratory primary research question in this dissertation: *“To what extent does a developmental perspective contribute to our understanding of individuals’ behaviour on SNSs, their privacy concerns, and their privacy protective behaviour, in particular with respect to the differences therein between adolescents, young adults, and adults?”*

One important contribution that this dissertation makes is that it includes adolescents (12- to 19-year-olds), young adults (20- to 30-year-olds), and adults (31-year-olds and older) in the analysis of behaviour on SNSs, privacy concerns, and privacy protective behaviour. Until now, no other study has yet addressed adolescents, young adults and adults in a single comparative analysis. Including respondents from a broad age range and distinguishing between these age groups will help to advance our understanding of online behaviour and related privacy concerns. For example, previous studies emphasized the intensive and risky use of SNSs by young adults (Acquisti & Gross, 2006; Govani & Pashley, 2005), whereas more recent comparative studies have showed that young adults are relatively safe users compared to both adolescents (Christodifides et al., 2012) and adults (Madden & Smith, 2010). These conflicting reports show the importance of making direct comparisons between the respondents of various ages in order to obtain an exact interpretation of the observed behaviour and concerns. Here, we will do so from a developmental perspective.

THE DEVELOPMENTAL PERSPECTIVE

A developmental perspective suggests that the observed behaviour on SNSs is typical in individuals of a certain age and resembles offline social development (Christodifides et al., 2012, p. 49; Subrahmanyam et al., 2006). In other words, the behaviour that adolescents exhibit on SNSs today is very likely similar to how individuals from previous generations behaved offline when they were the same age (Herring, 2008, p. 77; Marwick et al., 2010, p. 4; Mesch & Talmud, 2010); it is driven by the same social goals, only now the behaviour takes place online. Here, we will focus on the social goals of relationship development and identity development and their relationship with behaviour on SNSs. Although other social goals exist as well, such as the development of autonomy and the sexual self (Peter & Valkenburg, 2011), the social goals of relationship development and identity

development seem to be the most strongly connected with the adding of contacts and disclosure of information which takes place on SNSs (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; boyd, 2008; Ellison, Steinfield, & Lampe, 2007; Lampe, Ellison, & Steinfield, 2006; Madden & Smith, 2010; Marwick et al., 2010; Nadkarni, & Hofmann, 2012; Peter & Valkenburg, 2011; Regan & Steeves, 2010; Steijn & Schouten, 2013).

Relatively little attention has been paid to social development during young adulthood and adulthood when compared to adolescence. Peter and Valkenburg (2011) give a systematic and extensive theoretical analysis of the link between developmental tasks and online behaviour, but their analysis is focussed only on adolescents. Christofides and colleagues (2012) did include older respondents in their study, but they only discuss the adolescent behaviour from a developmental perspective. Yet, it can be expected that similar links between online behaviour and age specific tasks and desires exist in the case of young adults and adults. In this dissertation we will address this gap by comparing adolescents', young adults', and adults' behaviour on SNSs, their privacy concerns, and their privacy protective behaviour from a developmental perspective. Next, we will provide a short description for each age group in terms of their needs for relationship and identity development.

Relationship development is an important developmental goal during adolescence. Adolescents generally live with their parents, but peers play an increasingly important role in their lives (Brown, 1990, p.179). Adolescents need to learn the skills required to form and maintain intimate relationships (Peter & Valkenburg, 2011). Peer relationships and friendships can affect the psychological, social and academic development of the adolescent (Blieszner & Roberto, 2004; Savin-Williams & Berndt, 1990). Adolescents often have more friends than adults (Blieszner & Roberto, 2004; Hartup & Stevens, 1999) and their focus will be on acquiring new friendships (Boneva et al., 2006).

For young adults, the need to develop new relationships declines during young adulthood, and instead young adults start to develop existing relationships in depth. Young adults start to establish more intimate and satisfying relationships (Erikson, 1968). In their investigation of the relationship between sharing information on SNSs and relationships, Steijn and Schouten found that younger respondents report to have formed new relationships more often, whereas older individuals often report that have become more engaged with others (2013).

Although the role of friends is significant for all ages, the time spent with friends declines during adulthood (Blieszner & Roberto, 2004; Hartup & Stevens, 1999). In addition, adults can be expected to have developed stable relationships and they feel less of a need to use SNSs to establish new friendships. Instead, adults may be more likely to use SNSs in order to stay in touch with their family. This could, for example, involve their siblings or parents with whom it would require more effort to stay in touch at an elderly age as compared to adolescents, who have not yet left their parents' homes. At an elderly age, this might even involve adults' own children, or even their grand-children.

The development of an identity is another important developmental goal during adolescence (Erikson, 1959). Identity development often takes place through self-presentation towards peers. During adolescence, much time is spent with friends who become increasingly important in establishing an adolescent's identity (Brown, 1990, p. 179). In 2006, Boneva and colleagues noted that "Adolescence is defined by the need for intense person-to-person communication with a friend—spending a lot of time together [...] and self-disclosing" (p. 618). The internet has provided adolescents with a new medium in the form of SNSs to present themselves, through public posts, and hence to experiment with their identity (Valkenburg & Peter, 2008).

The adolescent need for identity development will persist during young adulthood (Arnett, 2006). During young adulthood individuals find employment, leave their parental homes, and they may even decide to settle down to start families as individuals become more self-sufficient and independent. As a result, the focus of their identity development during young adulthood starts to be geared more towards the areas of work and love (Arnett, 2006). The identity development in relation to love appears to be closely related to the fact that young adults establish more intimate relationships (Erikson, 1968). In regard to the identity development in relationship to work, it could be expected that young adults have an increased need to keep the identity which they have developed online separate from their offline identity while searching for employment by using the privacy settings.

Most identity development theories essentially state that as an individual grows older his or her identity strengthens (Waterman, 1982). As a result, adults will have less of a need to experiment with their identities or to present themselves favourably to others (Leary, 1995). Instead, they will be interested in strengthening their existing identities (Waterman, 1982).

We will explore three aspects of privacy appreciation from a developmental perspective: the behaviour on SNSs, privacy concerns, and the privacy protective behaviour. First, we will explore whether an individual's behaviour on SNSs is related to characteristics pertaining to the life phase of adolescents, young adults, and adults. As we have mentioned before, up until now academic research has mainly focussed on establishing the connection between adolescents' online behaviour and the developmental goals associated with adolescence (Christofides et al., 2012; Peter & Valkenburg, 2011; Subrahmanyam et al., 2006). Similar links between online behaviour and development related goals can be expected for young adults and adults. We will contribute to this field by including both young adults and adults in our analysis of behaviour on SNSs.

Second, we will explore whether a developmental perspective offers an alternative interpretation for the lower concern for privacy shown by young people (Fox et al., 2000; "Online privacy worries increase with age", 2009; Paine et al., 2007; Zukowski & Brown, 2007). To this end, we have introduced the notion of privacy conceptions: the individual's specific idea of what privacy exactly entails. In other words, an individual's privacy conception defines what it is he or she is exactly concerned about. We hypothesize that privacy conceptions are related to an individual's developmental life phase and that these differences can subsequently explain differences in the concern reported regarding privacy between young and old.

Thirdly, we will explore how individuals protect their privacy online. Exposure to the various privacy threats associated with information disclosure on SNSs can have serious long term consequences (Andrews, 2012; Binder, Howes, & Sutcliffe, 2009; Noda, 2009; Skeels & Grudin, 2009; Timmer, 2009). Better insight into why and how individuals protect their online privacy is therefore required. We will address what kind of privacy protection individuals of different ages consider to be important and we will explore the role of informational norms that are used to manage privacy on SNSs.

SAMPLE RECRUITMENT AND DATA COLLECTION

To accomplish the goal that has been set in this dissertation requires that a wide variety of privacy and SNS related variables be gathered from both young and old individuals. Therefore, we conducted a large-scale panel study from among a representative sample of the Dutch population from 12-year-old individuals and older. This section will first present general information concerning the sample and

² Facebook's terms of use explicitly states that you should not use Facebook if under the age of 13 (see Term 4.5, www.facebook.com/legal/terms)

methodology used for the studies included in this dissertation. The chapters that follow each include a methodological section with the specific methodological information needed to interpret the findings presented in that particular chapter.

Priority was given to obtaining a representative sample including respondents of all ages, since we were particularly interested in the differences found between younger and older individuals. Therefore, we used a stratified random sampling procedure consisting of eight different age groups. The following eight age groups were distinguished; early adolescence (12- to 13-year-olds), middle adolescence (14- to 15-year-olds), late adolescence (16- to 19-year-olds), emerging adulthood (20- to 25-year-olds), early adulthood (26- to 30-year-olds), early middle adulthood (31- to 40-year-olds), late middle adulthood (41- to 50-year-olds), and late adulthood (51-year-olds and older). In the remainder of this dissertation we will primarily refer to adolescents (12- to 19-year-olds), young adults (20- to 30-year-olds), and adults (31-year-olds and older). For practical reasons, individuals younger than the age of 12 were excluded from this study as they were expected to have difficulty understanding all the questions posed in the questionnaire and as they are officially not allowed to make use of some SNSs (e.g., Facebook³). All respondents received the same item set, in order to keep responses comparable³.

Moreover, in this dissertation we are interested in determining the differences between users and non-users of SNSs. That is why the sample was also stratified according to users and non-users of SNSs. The aim was to include at least a hundred respondents for each of the eight age groups and non-user/user combinations, resulting in a target sample of 1,600 respondents.

Hyves and Facebook were chosen as target SNSs and the subsequent questions posed in regard to SNS use were asked specifically in terms of Facebook or Hyves use. Facebook and Hyves were the two most popular SNSs in the Netherlands at the time of data collection (Oosterveer, 2012). Both sites specifically focus on management and interaction with social relationships. When mentioning SNSs in the remainder of this dissertation, we refer here to this limited definition whereas the term social media will be used when referring to all sites available.

In order to create an efficient and professional data collection procedure, considering the specific sample required, TNS-NIPO⁴, a Dutch research institute specializing in data collection, was asked to administer the questionnaire. TNS-NIPO has access to a panel of close to 200,000 participants.

A pilot study with a sample of 112 respondents was conducted from June 14 until June 28, 2011 to test the questionnaire. There were few comments on the survey items, but respondents indicated the questionnaire was quite lengthy.

³ The only exceptions to this were minor adjustments concerning the difference in the Dutch language between addressing youth and adults.

⁴ For more information see: <http://www.tns-nipo.com>

Table 1. — *Number of Respondents Contacted and Completed Questionnaire per Age Group in 2011.*

		CONTACTED			COMPLETED
Age		First wave	Second wave	Third wave	
12 – 13	Use	135			139
	Non Use	135	100	30	79
14 – 15	Use	135			131
	Non Use	135	100	20	72
16 – 19	Use	135			103
	Non Use	135	100	30	68
20 – 25	Use	135			143
	Non Use	135	100	20	80
26 – 30	Use	135			134
	Non Use	135	85		94
31 – 40	Use	—	—		139
	Non Use	270	250		90
41 – 50	Use	—	—		105
	Non Use	270	150		111
51+	Use	135			114
	Non Use	135	25		118
Total		2,160	910	100	1,720

Note. Concerning the age groups 31 to 40 and 41 to 50, TNS-NIPO did not have prior knowledge of whether or not respondents had made use of either Facebook or Hyves, so we could not specifically approach users and non-users for these age groups. Therefore, we simply approached 270 people for these age groups. In some cells, more respondents completed the questionnaire than had been contacted. This is because some of the respondents that were not users according to TNS-NIPO's data appeared to be users after all.

As a result, several items were dropped. In addition, we made minor adjustments to several items (e.g., changes in response categories or changes in the exact formulation) to optimize the questionnaire.

Main data collection ran from July 19 until August 4, 2011. In total 3,170 respondents were approached. Table 1 shows the distribution of respondents across the defined age groups. At first, 2,160 respondents were approached. However, there were too few respondents who did not use SNSs that filled in the

complete questionnaire. This was partly because some of the respondents that had been initially registered as non-users at TNS-NIPO appeared to make use of SNSs after all⁵. Therefore, in two additional waves, another 910 and 100 individuals were contacted. In the end, 1,720 respondents completed the questionnaire, resulting in a response rate of 54.3%.

In addition to the questionnaire, a choice-based-conjoint (CBC) analysis was conducted to obtain more insight into how privacy settings and other tools provided by SNSs are related to actual privacy protection. A CBC analysis is a popular research design that is used in marketing in order to determine how a new product might best suit consumers' wishes (Curry, 1996; Orme, 1996). The advantage of using a CBC design is that it can determine the relative value that respondents attribute to the features of a product while avoiding direct questioning, and instead relying on the respondents' actual decisions.

In a traditional CBC design, respondents are given several discrete choice tasks in which they are asked to select their favourite product from a selection of products which differ in several features. For example, respondents might be asked to decide which kind of pizza they would be most likely to buy. The pizzas presented will vary based on their brand, price, size, and toppings. For our purpose, respondents were presented with hypothetical SNSs instead. These sites varied in several features that affect respondents' privacy protection. Examples included whether or not the site provider has ownership over the information that is posted, and whether or not third parties have access to this information. The exact implementation of the CBC design is given in Chapter 6.

Table 2. — *Number of Respondents Participating in CBC Design per Age Group in 2012.*

Age	N
12 – 13	66
14 – 15	68
16 – 19	66
20 – 25	77
26 – 30	67
31 – 40	67
41 – 50	71
51+	78
Total	560

⁵ TNS-NIPO's data concerning the use and non-use of adolescents were based on a screening among their parents. Apparently, some adolescents have an SNS profile without the knowledge of their parents.

Data were collected from May 3 until May 21, 2012. Respondents who completed the original questionnaire were approached for this study. In total, 560 people participated. Table 2 shows the distribution of the respondents over the eight age groups.

OUTLINE

In this dissertation our primary goal is to explore to what extent a developmental perspective could contribute to our understanding of individuals' behaviour on SNSs, their privacy concerns, and their privacy protective behaviour, in particular with respect to the differences therein between adolescents, young adults, and adults. The following chapters have been divided into three parts. The first part includes an analysis of the behaviour on SNSs of adolescents, young adults, and adults (Chapters 2 & 3). The second part includes an analysis of the privacy concerns of adolescents, young adults, and adults (Chapters 4, 5). The third part includes an analysis of the privacy protective behaviour by adolescents, young adults, and adults (Chapters 6 & 7). Finally, Chapter 8 will provide a summary and general discussion of the research studies included and their implications.

BEHAVIOUR ON SNSs

In **Chapter 2**, we explore one specific social benefit often associated with SNSs: relationship development. Sharing information is an important aspect of relationship development and sharing information on SNSs is generally associated with positive relational effects among students (Hsu, Wang, & Tai, 2011; Ledbetter, et al., 2011; Park, Jin, & Annie Jin, 2011; Sheldon, 2009). We explore whether information sharing on SNSs has a positive or negative effect on relationships (i.e., an increase or decrease in liking, trust, or intimacy, or the formation or loss of a relationship), which relationships are most likely to be affected (i.e., weak ties or strong ties) and which forms of information sharing (e.g., private messages or public posts) have the strongest influence. Moreover, in contrast to earlier studies, we investigate information sharing on SNS and its relational outcomes with respondents of all ages (i.e., 12- to 83-year-olds).

In **Chapter 3**, we present data concerning adolescents', young adults', and adults' information disclosure, adding of contacts, and use of privacy settings. This chapter contributes to existing studies by not just focussing on adolescents but by also including young adults and adults in an investigation of behaviour on SNSs from a developmental perspective. We explored whether the online behav-

behaviour of the respondents could be related to expectations based on developmental goals. We focused on the goals of relationship and identity development which are especially relevant during adolescence. We expect that the adolescents' more intensive use of SNSs, as compared to older individuals, is related to these developmental goals. By including both young adults and adults in the analysis of online behaviour, a comprehensive picture of online behaviour can be made so as to advance our understanding of the behaviour displayed on SNSs and the differences between young and old users.

PRIVACY CONCERNS

In **Chapter 4**, we present the survey data on the relationship between privacy conceptions and the concern reported regarding privacy. We expect that adolescents, young adults, and adults will demonstrate differences in the focus of their privacy conceptions. We subsequently expect that the different privacy conceptions that younger and older people have, will subsequently be related to the differences in the concern that is reported.

In **Chapter 5**, we investigate if privacy conceptions mediate the relationship between age and concern regarding privacy, and between the use or non-use of SNSs and concern regarding privacy. If privacy conceptions mediate both relationships, this would then suggest that the differences in privacy conception—and subsequent differences in concern regarding privacy—might then be related to the fact that young people are the most prominent users of SNSs. Alternatively, if privacy conceptions are found to mediate only the relationship between concern for privacy and age, this would further support the notion that the differences in privacy conceptions and subsequent concern are related to an individual's life phase, but not necessarily to the use or non-use of SNSs.

PRIVACY PROTECTIVE BEHAVIOUR

In **Chapter 6** we present an innovative method for making a comparative analysis regarding the importance that individuals attribute to various threats to privacy. A choice-based conjoint analysis (Curry, 1996; Orme, 1996) was used to determine the importance attributed by individuals to several privacy-related features found in SNSs. This method allows us to determine the relative importance respondents attribute to the various features on SNSs that affect the privacy protection from various threats. Three kinds of potential privacy threats are

distinguished: social conflict, identity theft, and data mining. Until now, no study has of yet compared the relative importance attributed by individuals to the various privacy threats that they are exposed to on the internet. We will contribute by investigating how much importance adolescents, young adults, and adults assign to having protection from each of these threats.

In **Chapter 7** we will look at one specific aspect of privacy protection which has received relatively little attention in relation to information sharing on SNSs: the role of informational norms. While informational norms have been identified to play an important role in managing privacy boundaries (Johnson, 1989; Moore, 1984; Nissenbaum, 2010; Stein & Shand, 1974), no studies have explored which role informational norms actually play concerning the management of privacy on SNSs. Discrepancies in normative expectations related to information sharing on SNSs could explain the differences between younger and older individuals' online privacy behaviour. Youth may not always use the privacy settings, thus appearing to be privacy careless, because they have different normative expectations of their online information. We compare adolescents', young adults', and adults' adherence to norms of distribution and appropriateness which have been taken from Nissenbaum (2004) in order to establish the differences. Norms of appropriateness address which information is appropriate to share within a given context, whereas norms of distribution address whether information shared during an interaction should subsequently be shared with others.

GENERAL DISCUSSION

In **Chapter 8** the main findings of the preceding chapters are summarized followed by a discussion of these findings. This chapter will aim to provide an answer to our central research question and the implications of the results and findings will be discussed. Some methodological considerations will be given together with recommendations for future research.

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CHAPTER 2

Information sharing and relationships on social network sites.

ABSTRACT

This article investigates the relationship between sharing personal information and relationship development in the context of social network sites. The information disclosed on these sites could affect relationships in a different manner compared to more traditional one-on-one interactions, because they offer one-to-many communication. Respondents in the age range of 12 to 83 were surveyed about experiences of relationship development as a consequence of contact through Facebook or Hyves—the most popular Dutch SNSs. Results showed a primarily positive effect of information sharing on SNSs on relationships. Furthermore, relationship development mainly occurs among acquaintances and friends, and public posts are most closely related to relationship development. These findings suggest that SNSs might affect relationships in a distinct fashion as acquaintances and friends gain access to public self-disclosures which might normally only be reserved for close friends and family. Overall, this study provides insights into some of the positive aspects of SNSs' public nature.

Chapter adapted from;

Steijn, W.M.P., & Schouten, A.P. (2013). Information sharing and relationships on social network sites. *Cyberpsychology, Behavior, & Social Networking*, 16(8), 582-587.

INTRODUCTION

The relationship between sharing personal information (or self-disclosure) and relationship development has been well established both offline (Greene, Derlega, & Mathews, 2006) and online (Valkenburg & Peter, 2009). Studies have shown a primarily positive effect of sharing personal information on various aspects of relationship development. For example, sharing personal information can lead to more closeness or intimacy (Laurenceau, Barrett, & Pietromonaco, 1998; Ledbetter et al., 2011; Park, Jin, & Annie Jin, 2011; Valkenburg & Peter, 2007), more liking (Collins & Miller, 1994), and more trust (Sheldon, 2009) between interaction partners as well as leading to the development of new relationships (McKenna, Green, & Gleason, 2002; Peter, Valkenburg, & Schouten, 2005).

Nowadays, social interaction increasingly takes place on social network sites (SNSs) such as Facebook or Hyves. SNSs distinguish themselves from many other forms of interaction since they offer one-to-many communication, as opposed to one-on-one communication. Instant messaging, email, and face-to-face interaction often occur between only two people. SNSs, on the other hand, allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections (boyd & Ellison, 2007). The information shared through public posts on these sites is usually available for all connections to see. These connections are sometimes strangers, but in general, they are known people (Lampe, Ellison, & Steinfield, 2006; Lenhart & Madden, 2007; Subrahmanyam & Greenfield, 2008) and include both strong (e.g., family) and weak ties (e.g., acquaintances) (Choi, Kim, Sung, & Sohn, 2010; Thelwall, 2008).

Up until now, how information shared on SNSs may affect relationships and which relationships are likely to be affected has received little attention. Therefore, the goal of this chapter is to explore if information shared on SNSs is related to relationship development. Specifically, we will investigate whether information shared on Facebook and Hyves, the Dutch equivalent of Facebook, has a positive or negative effect on liking, trust, or intimacy within a relationship, and whether shared information will result in the formation of new relationships or the loss of existing relationships.

Several studies have investigated the relationship between relational factors, such as trust and intimacy, and information sharing in online communities (Bagozzi & Dholakia, 2006; Bateman, Gray, & Butler, 2011; Chiu, Hsu, & Wang, 2006; Lin, 2006). Our study contributes to these studies in two important ways.

First of all, these studies often took place in the context of online forums with professional contacts or strangers that shared an interest. On SNSs, however, the information shared is accessible by both strong and weak ties. As such, this study will investigate whether strong (e.g., a partner) and weak ties (e.g., an acquaintance) are affected differently by the information shared. Second, many of these studies investigate how relationships develop in online communities and in turn affect the information that is shared. Instead, this study investigates how sharing personal information on an SNS might affect these relational factors.

Simultaneously sharing information with people with whom we have different levels of intimacy (family vs. friends vs. strangers) can have both positive and negative consequences. In their theory of social penetration, Altman and Taylor (1973) describe how interactions generally “proceed only generally and systematically from superficial to intimate topics” (p.29). On SNSs acquaintances and strangers have access to disclosures normally only shared with friends. Sharing intimate information in such a context may have a negative impact on the relationship, for example, others may consider the sharer to be maladjusted and would like him or her less as a friend (Chalkin & Derlega, 1974). Previous work has investigated how this social overlap on SNSs can strain relationships (Binder, Howes, & Sutcliffe, 2009; Skeels & Grudin, 2009), as information usually only shared with friends also becomes available for colleagues and family, or vice versa. Generally, users are aware of this social overlap (Lampinen, Tamminen, & Oulisvirta, 2009; Raynes-Goldie, 2010) and several strategies can be used to manage this situation like having two separate profiles (Lampinen et al., 2009; Stutzman & Hartzog, 2010).

Alternatively, the one-to-many interaction on SNSs could also result in positive relationship development which would not occur through just one-to-one interaction. Whereas one-on-one communication primarily takes place with stronger ties, due to time constraints,—we simply cannot interact with everyone we know—information shared with friends on SNSs automatically becomes available for strangers, colleagues, and acquaintances as well. This could result in an improved relationship with these ties since they can gain access to more information than they would ordinarily have without SNSs. Consider, for example, family—a niece—who is normally only seen at annual family gatherings, but who can now constantly read self-disclosures made to friends and vice versa. This constant exposure to each other could improve the relationship, considering the documented positive effects of self-disclosure on relationships. This suggests that any change in relationship development on SNSs will primarily take place

among weak ties (Donath & boyd, 2004; Hsu, Wang, & Tai, 2011), since these ties will have especially gained increased access to personal information on SNSs.

Previous studies have shown both positive and negative consequences on relationship development due to SNSs. Recent findings indicate that 58% of 12- to 17-year-olds and 61% of those 18 or older felt closer to another person because of an experience on SNSs, whereas only 22% and 15% respectively had an experience on SNSs that ended their relationships (Lenhart et al., 2012; Rainie, Lenhart, & Smith, 2012). However, these studies did not link these findings to the information shared on the site.

Studies that have explored the link between self-disclosure and relationship development in the context of SNSs generally report a positive effect (Ledbetter et al., 2011; Park et al., 2011; Sheldon, 2009; Hsu et al., 2011). However, most of these studies were conducted among students, while nowadays SNSs are used by a much wider population (Lenhart, Purcell, Smith, & Zickuhr, 2012; Hampton, Goulet, Rainie, & Purcell, 2012). In this study, we will study the effect of SNSs among a sample of 12-year-olds and older.

The aim in this chapter is to explore the link between relationship development and information sharing on SNSs. First, we investigate if SNSs are perceived to affect relationship development positively or negatively. The majority of studies report positive relationship development in terms of liking, trust and intimacy due to information sharing (Ledbetter et al., 2011; Park et al., 2011; Sheldon, 2009; Hsu et al., 2011), however this also suggests that it is more likely that new relationships are formed (i.e., a positive development) than that existing relationships are lost (i.e., a negative development). Therefore, we hypothesize:

H1a: Within the context of SNSs, more relationships are formed as opposed to broken.

H1b: Within the context of SNSs, more relationships progress in terms of liking, trust, and intimacy as opposed to regress.

Since the publicity of shared information is what distinguishes SNSs from other media, public posts are expected to show the strongest association with relationship development. Our next hypothesis is thus:

H2: Of all forms of information sharing on SNSs, public posts will be most closely related to relationship development.

Moreover, weak ties are expected to gain the most from the available information on SNSs because they may access private information that people would otherwise never have gained access to in the first place. Previous work would support the prediction that relationship development mainly takes place among weak ties (Donath & boyd, 2004; Hsu et al., 2011). Our final hypothesis therefore states:

H3: Within the context of SNSs, relationship development will mainly take place among weak ties.

METHOD

PARTICIPANTS

The data were collected during the period of July 19 to August 4, 2011 by the research institute TNS-NIPO, and was part of a large scale questionnaire about SNSs and related concerns regarding privacy. A stratified sampling procedure over eight age groups was used to obtain the sample. In total 1,008 respondents in the age range of 12 to 83 with a profile on either Facebook or Hyves completed the questionnaire. Six respondents were dropped from the analysis as they explicitly stated having created their profile for a different purpose (e.g. as requirement for using a different site) and were not using it. Of the remaining 1,002 respondents, 125 (12.5%) have a profile only on Facebook, 365 (36.4%) have a profile only on Hyves, and 512 (51.1%) have a profile on both sites, of which 268 respondents reported to mainly use Hyves (52.3%) and 244 mainly use Facebook (47.7%). The mean age of all respondents was 28.7 ($SD = 15.5$) and 40% was male.

MEASURES

Based on the findings from previous studies, we are interested in learning whether the information shared on SNSs results in the formation of new relationships (McKenna et al., 2002; Peter et al., 2005) or the loss of existing ones. Moreover, we investigate whether information shared on SNSs affects liking (Collins & Miller, 1994), trust (Sheldon, 2009), or intimacy (Laurenceau et al., 1998; Ledbetter et al., 2011; Park et al., 2011; Valkenburg & Peter, 2007) within existing relationships, since these form the main characteristics of relationships. To assess the relative occurrence of these different indicators of relationship development, the following eight yes/no questions were created: “Due to contact through your

Facebook/Hyves profile do you (1) like someone more; (2) like someone less; (3) trust someone more; (4) trust someone less; (5) feel more involved with someone; (6) feel less involved with someone; (7) have gained a new friendship; (8) have lost a friendship". If answered positively, two items followed. First, they were asked what information caused the change in relationship development: *profile information, public posts, chat, private messages, or other*. Second, for the first six indicators, respondents were asked who the relationship development affected: *people known from the internet, friends of a friend, friends* (including sports, hobbies, and college friends), *close friends, family, colleagues, acquaintances, or other*. For the last two indicators (i.e., gained/lost a friendship), the second item asked what the closest friendship lost or gained was: *acquaintance, friend, close friend, partner* (or girl/boyfriend), or *other*.

In addition, data were obtained regarding what respondents share publicly on their profile. Respondents were asked to select which items they revealed (*profile information*) from a list of 12 options (e.g., name, address, interests). Next, they were asked how often they shared a public post (*post frequency*). Response possibilities were *never, once a month, several times a month, once a week, several times a week, once a day, or several times a day*. Finally, respondents reported which topics, from a list with 11 options (e.g., health, family, or parties), they addressed in these posts (*post content*).

RESULTS

Of all the respondents, 574 (57.3%) reported to have experienced at least one of the relationship developments due to contact through Facebook or Hyves. Specifically, 19.1% ($N = 191$) formed a new relationship, 12.2% ($N = 122$) lost a relationship, 22.6% ($N = 226$) liked someone better, 14.0% ($N = 140$) liked someone less, 7.9% ($N = 79$) trusted someone more, 6.0% ($N = 60$) trusted someone less, 31.7% ($N = 318$) were more involved with someone, and 5.2% ($N = 52$) were less involved with someone. New relations have been met in person in 76.4% ($N = 146$) of all reported occurrences. No consistent differences were found in the reporting of relationship development between respondents with only a Hyves profile, only a Facebook profile, or both. Respondents with a Hyves profile were more likely to report having lost a relationship (15.3%), compared to respondents with a Facebook profile (8.0%) or both (10.9%), $\chi^2(2, 1002) = 6.20, p = .045$. Respondents with both profiles were more likely to report feeling more involved with someone (35.4%) compared to respondents with a Facebook profile (32.0%) whereas respondents

with a Hyves profile were less likely to report this (26.6%), $\chi^2(2, 1002) = 7.58, p = .023$.

More positive than negative relationship development was reported (Hypotheses 1a and 1b). McNemar analyses were used to test the significance of these differences. Significantly more respondents reported to have gained, rather than lost a relationship, $\chi^2(1, 1002) = 22.34, p < .001$, to like someone better as opposed to worse, $\chi^2(1, 1002) = 30.61, p < .001$, and to feel more involved with someone as opposed to less, $\chi^2(1, 1002) = 229.49, p < .001$. No significant difference was found between the positive and negative change in trust.

The second hypothesis predicted that public posts would be most closely related to relationship development. Table 1 shows that public posts are indeed consistently reported more often as the cause for all forms of relationship development. McNemar analysis confirmed that the differences are statistically significant in the majority of the cases.

Table 1. — *Reported Causes of Relationship Developments*

	Gain Rel.	Lost Rel.	Positive Like	Negative Like	Positive Trust	Negative Trust	Positive Involved	Negative Involved
<i>N</i>	191	122	226	140	79	60	318	52
Public Posts	49.7%	36.9%	64.2%	59.3%	53.2%	68.3%	63.8%	55.8%
Private Messages	31.9%**	36.1%	36.7%***	27.9%***	48.1%	23.3%***	48.7%**	28.8%**
Profile Information	23.0%***	4.9%***	11.5%***	10.0%***	12.7%***	20.0%***	11.6%***	9.6%***
Chat	39.3%	15.6%***	34.5%***	18.6%***	38.0%	25.0%***	21.9%***	26.9%*
Other	8.4%***	26.2	3.5%***	12.1%***	2.5%***	6.7%***	4.7%***	11.5%***

Note. McNemar significances are reported for differences in relation to Public Posts; * $p < .05$, ** $p < .01$, *** $p < .001$.

Rel. = relationship

The third hypothesis predicted that relationship development would mainly take place among weak ties. Table 2 shows that relationships formed or lost happen among weak ties, such as friends or acquaintances, more often than strong ties, such as close friends and partners. One sample t-tests between percents confirmed that weak ties were reported more often than strong ties for both forming a relationship, $t(190) = 11.40, p < .001$, and losing a relationship, $t(121) = 4.819, p < .001$. Similarly, McNemar analysis confirmed that compared to close friends and family, mainly relationships with friends and acquaintances experienced a positive or negative change in liking, trust and involvement in a relationship (Table 3).

Table 2. — *Reported Strength of Newly-formed or Lost Relationship*

	Gain relationship	Lost relationship
<i>N</i>	191	122
Acquaintances	39,8%	41,0%
Friends	40,3%	24,6%
Close Friends	9,4%	16,4%
Partner (girl/boyfriend)	7,9%	10,7%
Other	2,6%	7,4%

Finally, a logistic regression analysis was conducted for each indicator of relationship development with profile information, post frequency, and post content as independent variables, to find further support for hypothesis 2. Gender and Age were added as control variables. Table 4 gives an overview of the results.

Younger respondents were more likely to report forming a new relationship ($b = -0.013$, $p = .037$) and liking someone more ($b = -0.014$, $p = .024$), whereas older respondents reported feeling more involved with someone else ($b = 0.012$, $p = .011$). Gender had a significant effect on trusting someone less ($b = -0.613$, $p = .048$) and feeling more involved with someone ($b = -0.301$, $p = .043$). In both situations, women were more likely to report the relationship development than men.

Table 3. — *Reported Type of Relationship Changed*

	Positive Like	Negative Like	Positive Trust	Negative Trust	Positive Involved	Negative Involved
<i>N</i>	226	140	79	60	318	52
Friends	57,1%	46,4%	57,0%	46,7%	54,7%	53,8%
Acquaintances	38,9% ^a	35,0%	22,8% ^a	31,7%	31,1% ^a	6,9% ^a
Only known from the Internet	11,5% ^{ab}	8,6% ^{ab}	7,6% ^{ab}	6,7% ^{ab}	6,9% ^{ab}	5,4% ^a
Colleagues	12,4% ^{ab}	9,3% ^{ab}	12,7% ^{ab}	5,0% ^{ab}	13,2% ^{ab}	5,4% ^a
Friends of Friends	24,3% ^{ab}	23,6% ^a	15,2% ^a	25,0% ^a	14,2% ^{ab}	1,2% ^a
Close Friends	8,4% ^{ab}	4,3% ^{ab}	20,3% ^a	11,7% ^{ab}	19,5% ^{ab}	11,5% ^a
Family	11,5% ^{ab}	10,0% ^{ab}	22,8% ^a	10,0% ^{ab}	22,3% ^{ab}	13,5% ^a
Other	1,3% ^{ab}	0,7% ^{ab}	0,0% ^{ab}	1,7% ^{ab}	1,3% ^{ab}	1,9% ^{ab}

Note. McNemar significances with at least $p < .05$ level are reported in relation to *Friends* with an A and in relation to *Acquaintances* with a B.

Table 4. — *Logistic Regressions Predicting Relationship Developments*

	Gain rel.	Lost rel.	Positive Like	Negative Like	Positive Trust	Negative Trust	Positive Involved	Negative Involved
Nagelkerke R^2	.112	.053	.178	.109	.078	.054	.039	.042
Gender (Ref. = ♂)	.241 (1.27)	-.041 (.96)	-.004 (.99)	-.127 (.88)	-.083 (.92)	-.613* (.54)	-.301* (.74)	-.496 (.61)
Age	-.013* (.99)	-.006 (.99)	-.014* (.99)	-.014 (.99)	-.012 (.99)	-.007 (.99)	.012* (1.01)	-.001 (1.00)
Profile Information	.026 (1.03)	-.036 (.96)	.026 (1.03)	-.100* (.91)	-.061 (.94)	-.136* (.87)	.043 (1.04)	-.140* (.87)
Post Content	.119*** (1.13)	.122*** (1.13)	.166*** (1.12)	.166*** (1.18)	.136** (1.12)	.156** (1.17)	.145*** (1.16)	.140* (1.15)
Post Frequency	.227*** (1.25)	.135* (1.14)	.277*** (1.32)	.195** (1.22)	.217** (1.24)	.043 (1.04)	.140** (1.15)	.066 (1.07)
Constant	-2.736	-2.565	-2.816	-2.205	-3.152	-2.278	-2.376	-2.683

Note. Unstandardized logistic coefficients with odds ratios in parentheses. Profile information scored from 0 to 12 options revealed. Post Content scored from 0 to 11 topics. Post Frequency scored from 1 for *never* to 7 for *several times per day*. * $p < .05$, ** $p < .01$, *** $p < .001$.

Rel. = relationship

Ref. = reference

Providing further support for the second hypothesis, both post content and post frequency had a positive relationship with almost all relationship developments. This indicates that respondents who address more topics in their posts are more likely to report an increase or decrease in liking the other, trust, or intimacy within a relationship, or the formation of a new relationships, or loss of an existing relationship. Posting more frequently had a similar effect except for a decrease in trust and intimacy. See Table 4 for the regression values.

Finally, profile information had a negative relationship on liking someone less ($b = -0.100$, $p = .033$), trusting someone less ($b = -0.136$, $p = .037$), or feeling less involved with someone ($b = -0.140$, $p = .043$). In other words, these three negative relationship developments were less likely to be reported by those respondents who reveal more profile information.

DISCUSSION

The main aim of this study was to explore the relationship between relationship development and information sharing on SNSs. Therefore, respondents were asked to report whether changes in intimacy, liking, trust, involvement, and relationships lost/gained had occurred due to contact through Facebook or Hyves. The results provide evidence that the information shared on SNSs has a primarily positive effect on relationship development. This supports existing research that information shared on SNSs has a positive effect on relationship development (Ledbetter et al., 2011; Park et al., 2011; Sheldon, 2009; Hsu et al., 2011).

A strong relationship was found between sharing information through public posts and relationship development. Respondents consistently reported public posts as being a main cause of relationship development and logistic regressions showed that relationship development is consistently predicted by the frequency of public posts and the number of topics addressed in these posts. The finding that frequency and content of the information shared are important for relationship development is in keeping with previous findings (Park et al., 2011; Peter et al., 2005; Subrahmanyam & Greenfield, 2008). Although we did specifically ask respondents what had caused the change in relationship development, we cannot make causal inferences based on the nature of our data. Future research could further test the causality of the relationships we exposed.

Results showed that relationship development occurred more often among weak ties than strong ties, in support of the current body of existing literature (Donath & Boyd, 2004; Hsu et al., 2011). Relationship development was more likely to occur with friends and acquaintances than with close friends and family. This supports the assumption that simultaneously sharing with both weak and strong ties on SNSs through public posts can also be beneficial. We often lack the resources to maintain all our relationships through one-on-one channels and most of the information would subsequently be limited to our closest friends and relatives. By sharing information through public posts on SNSs, weak ties can gain access to information that would have otherwise not been available to them. This may help strengthen those relationships with weak ties.

Another finding was that respondents who share more information on their profile were less likely to report negative relationship development such as a decrease in trust and intimacy. This appears to be related to a similar argument which was made by Ellison, Vitak, Steinfield, Gray, and Lampe (2011), stating that profile information can support relationships as individuals are able to establish a common ground between themselves (p. 24). Individuals who create a more

elaborate image of who they are, where they live, and what their interests are, are at a lesser risk to discover an unpleasant surprise in a relationship.

Some limitations apply to this current study. One major limitation is that we used a simple yes- or no-scale to measure relationship development. It would have been better if our constructs could have been measured at a higher level of measurement, so then we could have tested the relationship between public posts on SNS and relationship development with regression analysis. This may impact the validity of our findings as the current design allowed for less variance in the responses. Future research should consider using a gauge of measurement with different response scales.

A second limitation is the lack of data on chat or private messaging behaviour on SNSs by the respondents. Therefore, the logistic regressions only included data regarding posting behavior and the profile information respondents had filled in. Although logistic regressions indeed confirmed that public posts are related to relationship development, this could not be compared with the possible effects of chatting or private messages. Future research might wish to compare both the relationship between public posts and relationship development and private posts and relationship development.

With the increasing role that SNSs play in people's daily lives—Hyves has 9.7 million Dutch and Belgium¹ users and Facebook has over 1 billion users worldwide²—it is important to understand how SNSs affect peoples' lives. The public nature of SNSs has often been associated with several negative consequences such as the loss of privacy (Acquisti & Gross, 2006; Gross & Acquisti, 2005), and tension in relationships, both due to the presence of many different social relationships (Binder et al., 2009; Skeels & Grudin, 2009) and the explicit and public acceptance or rejection of friend requests (boyd, 2006; Tokunaga, 2011). However, the popularity of the sites suggests that they are not without merits as well, and the users of SNSs are continuously balancing the risks and benefits in making use of their profiles (Ellison et al., 2011). This chapter has addressed one such possible merit of sharing information on SNSs; that the public sharing of personal information, opinions and thoughts on SNSs can lead to positive developments in our relationships.

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CHAPTER 3

A developmental perspective regarding the behaviour of adolescents, young adults, and adults on social network sites.

ABSTRACT

It is often said that young people share too much about themselves online. This chapter provides further support for taking a developmental perspective to understand online behaviour, in the way that information is shared and contacts are chosen on social network sites. Adolescents', young adults', and adults' use of social network sites has been investigated from a developmental perspective that was based on relationship identity development needs. The results showed that adolescents' behaviour appears to be linked to forming new friendships, that young adults' behaviour reflects the need to find more meaningful relationships, and that adults' behaviour is focussed more on family. The exact nature of the relationships between online behaviour and developmental goals are described and discussed.

Chapter adapted from;

Steijn, W.M.P. (in press). A developmental perspective regarding the behavior of adolescents, young adults, and adults on social network sites. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*.

INTRODUCTION

BACKGROUND

Social network sites (SNSs), like other social media, such as blogs and twitter, have found an important place in the lives of many people. Here, we examine specifically SNSs in which social relationships and friendships are the major focus. Facebook serves as the best known example in this category with over 1 billion users¹. Originally intended for students, user demographics of Facebook include individuals of all ages nowadays (Hampton, Goulet, Rainie, & Purcell, 2011; Lenhart, Purcell, Smith, & Zickuhr, 2010). Nevertheless, it is predominantly younger people that make the most intensive use of these SNSs.

The image that persists in popular debate is that young people are risky users of SNSs. However, this primarily relies on a generational interpretation of online behaviour. Young people are often seen as a generation that shares too much about themselves and they do this too openly on SNSs and that they care little about their privacy (Nussbaum, 2007). This view seems to resemble the earlier studies in which young people were portrayed as sharing too much personal information on SNSs without adjusting the privacy settings to protect this information (Acquisti & Gross, 2006; Debatin, Lovejoy, Horn, & Hughes, 2009; Govani & Pashley, 2005). This contention is reinforced all the more by the media, which provides countless examples on how disclosures by young people on these sites went awry (e.g., Ferenstein, 2013; Levy, 2009; O'Dell, 2011).

The intensive use of SNSs by young people, which is reflected in the extensive sharing of information and their numerous contacts (Christofides, Muise, & Desmarais, 2012; Pfeil, Arjan, & Zaphiris, 2009) could, however, also be related to age-specific developmental goals. Two important developmental goals for young people are relationship and identity development (Brown, 1990, p.179; Erikson, 1959; Peter & Valkenburg, 2011; Savin-Williams & Berndt, 1990). The fact that young people add more contacts than adults do, could be related to their developmental goal of relationship development. The fact that young people generally share more personal information on SNSs could be related to the developmental goal of developing their identity in relation to their peers. Here, we provide an analysis of the online behaviour of both young and old from this developmental perspective. Although we cannot provide conclusive evidence for a developmental perspective in this chapter, we will provide further support for the plausibility of a developmental perspective in order to understand young people's online behaviour.

¹ Statistic retrieved from newsroom.fb.com

Up until now, few studies have actually compared younger and older individuals' use of SNSs (Christofides et al., 2012; Madden & Smith, 2010; Pfeil et al., 2009). In comparative studies, young adults are portrayed as relatively safe users of SNSs, who share less information than adolescents and adults, and who adjust the privacy settings more often (Christofides et al., 2012; Madden & Smith, 2010). Christofides and colleagues (2012) compared adolescents' (12- to 18-year-olds) and adults' (19- to 78-year-olds) behaviour on Facebook. They found that adolescents were more likely to add contacts they did not know and to share more information on their profiles. Madden and Smith (2010) concluded that younger respondents (18- to 29-year-olds) were more active managers of their online information on social media in general, which included adjusting the privacy settings, than older respondents (30-year-old and older). These findings are at odds with the studies which examined only young adults and which noted the intensive and risky use of SNSs by young adults (Acquisti & Gross, 2006; Debatin et al., 2009; Govani & Pashley, 2005). In addition, Pfeil and colleagues (2009) reported that in their sample, young users of MySpace (13- to 19-year-olds) had more contacts and shared more messages than older users (60 years and older).

Today, no single study has compared the behaviour on SNSs by adolescents, young adults and adults, which are defined here as 12- to 19-year olds, 20- to 30-year olds, and 31-year-olds and older, respectively. The lack of direct comparison between these three age groups makes it difficult to assess exactly how younger and older individuals differ in their use of SNSs. Therefore, the primary aim is to investigate the differences in behaviour on SNSs among adolescents, young adults, and adults. We hypothesize that behaviour on SNSs, such as information sharing and adding of contacts, is closely related to the developmental goals of relationship and identity development and we expect that these goals might account for some of the differences observed in SNSs use. Secondly, we will compare the use of privacy settings in order to make a better assessment of whether adolescents are indeed the most risky users of SNSs.

THE DEVELOPMENTAL PERSPECTIVE

A developmental perspective suggests that the behaviour observed on SNSs is typical in individuals of a certain age and that their behaviour resembles offline social development (Christofides et al., 2012, p. 49; Subrahmanyam, Smahel, & Greenfield, 2006). In other words, the behaviour that adolescents exhibit on SNSs today is similar to how individuals from previous generations behaved offline

when they were the same age (Herring, 2008, p. 77; Marwick, Diaz, & Palfrey, 2010, p. 4; Mesch & Talmud, 2010); it is driven by the same social goals, only now the behaviour takes place online. In this study, we will focus on the social goals of relationship development and identity development and their relationship with the behaviour displayed on SNSs. Although other social goals exist as well, such as the development of autonomy and the sexual self (Peter & Valkenburg, 2011), the social goals of relationship development and identity development seem to be the most strongly connected to the adding of contacts and disclosure of information which takes place on SNSs (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; boyd, 2008; Ellison, Steinfield, & Lampe, 2007; Lampe, Ellison, & Steinfield, 2006; Madden & Smith, 2010; Marwick et al., 2010; Nadkarni, & Hofmann, 2012; Peter & Valkenburg, 2011; Regan & Steeves, 2010; Steijn & Schouten, 2013).

Relatively little attention has been paid to social development during young adulthood and adulthood when compared to adolescence. For example, while Peter and Valkenburg (2011) give a systematic and extensive theoretical analysis of the link between developmental tasks and online behaviour, their analysis is focussed only on adolescents. However, it can be expected that similar links between behaviour on SNSs and age specific tasks and desires exist for young adults and adults. In this study, we will investigate and compare adolescents', young adults', and adults' behaviour from a developmental perspective. Here, we will first provide a short description for each age group in terms of their needs for relationship and identity development.

Relationship development is an important developmental goal during adolescence. Adolescents need to learn the skills required to form and maintain intimate relationships (Peter & Valkenburg, 2011). In addition, peer relationships and friendships can affect the psychological, social and academic development of the adolescent (Blieszner & Roberto, 2004; Savin-Williams & Berndt, 1990). Generally, adolescents will have more friends than adults (Blieszner & Roberto, 2004; Hartup & Stevens, 1999) and their focus will be on acquiring new friendships (Boneva et al., 2006).

Adolescents are also in a life phase during which the development of an identity is an important task (Erikson, 1959). Identity development often takes place through self-presentation towards peers. Much time is spent with friends who become increasingly important in establishing an adolescent's identity (Brown, 1990, p. 179). In 2006, Boneva and colleagues noted that "Adolescence is defined by the need for intense person-to-person communication with a friend—spending a lot of time together [...] and self-disclosing" (p. 618). The internet has

provided adolescents with a new medium in the form of SNSs to present themselves, through public posts, and hence to experiment with their identity (Valkenburg & Peter, 2008).

For young adults, the need to develop new relationships declines during young adulthood, and instead young adults start to develop existing relationships in depth. Young adults start to establish more intimate and satisfying relationships (Erikson, 1968). In their investigation of the relationship between sharing information on SNSs and relationships, Steijn and Schouten found that younger respondents report that they have formed new relationships more often, whereas older individuals often report that they have become more engaged with others (2013).

The adolescent need for identity development will persist during young adulthood (Arnett, 2006). During young adulthood individuals find employment, leave their parental homes, and they may even decide to settle down and start families as individuals become more self-sufficient and independent. As a result, the focus of their identity development during young adulthood starts to be geared more towards work and love (Arnett, 2006). The identity development in relation to love appears to be closely related to the fact that young adults establish more intimate relationships (Erikson, 1968). In regard to the identity development in relationship to work, it could be expected that young adults have an increased need to keep the identity which they have developed online separate from their offline identity while searching for employment by using the privacy settings. Employers who check the online profiles of their applicants are becoming an increasing concern. A recent study has shown that 20 to 40 percent of European recruiters would not invite a qualified candidate if they would find embarrassing pictures on social media (*"Réseaux sociaux: comment réagissent les recruteurs face à un détail gênant sur un candidat?"*, 2013).

Adults are expected to have the least need for SNSs as a tool to achieve their social goals. Although the role of friends is significant for all ages, the time spent with friends declines during adulthood (Blieszner & Roberto, 2004; Hartup & Stevens, 1999). In addition, adults can be expected to have developed stable relationships and they feel less of a need to use SNSs to establish new friendships. Instead, adults may be more likely to use SNSs in order to stay in touch with their family. This could, for example, involve their siblings or parents who require more effort to stay in touch at an elderly age when compared to adolescents who have not yet left their parents' homes. At an elderly age, this might even involve adults' own children, or even their grand-children.

Similarly, adults can be expected to have less need for SNSs as tools for developing their identity. Most identity development theories state that as an individual grows older, his or her identity strengthens (Waterman, 1982). As a result, adults will have less of a need to experiment with their identities or to present themselves favourably to others (Leary, 1995). Instead, they will be interested in strengthening their existing identities (Waterman, 1982).

CURRENT STUDY

In this study the behaviour of adolescents, young adults, and adults on SNSs, in the form of information sharing and the adding of contacts, will be compared. We will investigate to which extent this online behaviour can be linked to developmental social goals. Generally, the use of SNSs has been linked to adolescent developmental goals, that is to say, relationship and identity development (Boneva et al., 2006; boyd, 2008; Ellison et al., 2007; Lampe et al., 2006; Madden and Smith, 2010; Marwick et al., 2010; Peter & Valkenburg, 2011; Nadkarni, & Hofmann, 2012; Regan & Steeves, 2010; Steijn & Schouten, 2013).

The need for relationship development is expected to be at its prime during adolescence (Boneva et al., 2006, p. 618), while it appears to be less in young adults, and even less in adults. In particular, adolescents are more inclined to turn to SNSs in order to make new friends and to become acquainted with them (Valkenburg, Schouten & Peter, 2005). Moreover, in early adolescence, family relationships become less important and there is a significant increase in the number of peer relationships and their importance (Harter, 1999). During young adulthood and adulthood, the need for SNSs as tool for relationship experimentation will likely lessen as young adults and adults shift their focus to strengthening their existing relationships (Erikson, 1985; Waterman, 1982). Adults are especially expected to use SNSs to interact with family instead. Thus, the following hypotheses have been formulated.

H1a: Adolescents will have more contacts on SNSs compared to young adults and adults.

H1b: Adolescents will be more likely to report using SNSs to become acquainted with people, compared to young adults and adults.

H1c: Adolescents will be more likely to report that they mainly use SNSs to meet new people compared to young adults and adults.

H1d: Adults will be more likely to have primarily family members as contacts on SNSs compared to young adults and adults.

The need for identity development is expected to peak during adolescence (Erikson, 1959), when adolescents have to manage their identities in relation to peers (Brown, 1990, p. 179), and this need will continue into young adulthood. Self-presentation is an important method for individuals to develop their own identities. Adolescents and young adults can therefore be expected to disclose more information on SNSs, in line with previous findings (Christofides et al., 2012; Pfeil et al., 2009), as they actively present themselves to others to build their identities. During adulthood, the need to experiment with identity is expected to be less (Waterman, 1982).

H2a: Adolescents and young adults will post more frequently on SNSs compared to adults.

H2b: Adolescents and young adults will post about more topics on SNSs compared to adults.

H2c: Adolescents and young adults will be more likely to report that they mainly use the SNSs for self-presentation compared to adults

Finally, we will look at the use of privacy settings. Young people are often considered to be risky users of SNSs as they make little use of the privacy settings available so as to protect the information they share online (Acquisti & Gross, 2006; Debatin et al., 2009; Govani & Pashley, 2005). Previous comparative studies have shown that young adults and adults use the privacy settings more often than adolescents (Christofides et al., 2012), and that young adults do this more often than adults (Madden & Smith, 2010). These results suggest that while adolescent may make relative little use of the privacy settings, in fact, young adults make the most use of them. Thus, the following hypothesis has been formulated.

H3: Young adults are more likely to have adjusted their privacy settings compared to adolescents and adults.

METHOD

PROCEDURE

An online survey was conducted by the research institute TNS-NIPO, which allowed respondents to participate from their own computers at home. From July 19 until August 4, 2011, 3,170 respondents in the age range of 12 to 83 were approached for the survey. In total, 1,720 respondents completed the questionnaire of which 1,008 respondents had a profile on an SNS. Respondents gave their consent to participate in the research survey (parents provided consent for individuals younger than 18 years of age) and upon completion of the questionnaire they received special points, which respondents could trade for discount coupons. All respondents received the same questionnaire with some minor modifications regarding the language and politeness rules for addressing children and adults in Dutch.

PARTICIPANTS

Six respondents were removed from the sample as they had explicitly stated that they created their profile merely for a different purpose (e.g., as requirement for using another site). Of the remaining 1,002 respondents, 125 (12.5%) had a profile only on Facebook, 365 (36.4%) only had a profile on Hyves, and 512 (51.1%) had a profile on both sites. Respondents using both Hyves and Facebook were prompted to answer the items for the SNS they used the most.

Respondents were distributed among the following three age groups: 372 adolescents (12- to 19-year-olds, $M = 14.60$, $SD = 2.16$), 277 young adults (20- to 30-year-olds, $M = 25.55$, $SD = 3.10$) and 353 adults (31-year-olds and older, $M = 46.22$, $SD = 12.11$). Gender distribution was uneven over the three age groups with 47.0%, 28.9%, and 41.1% males respectively. Therefore, all of the analyses were done a second time with all of the cases being weighted for gender distribution in order to see if this would affect our results. Weights were calculated by dividing the population distribution with the sample distribution. Information concerning gender distribution in the Dutch population was retrieved from statline.cbs.nl² in August 2011. None of the weighted analyses showed different results and all of the results in the remainder of this chapter have been based on the data without weights.

² CBS (Centraal Bureau voor Statistiek) provides up-to-date statistics concerning the Dutch population.

MEASURES

Contacts. First of all, the participants were asked how many contacts they had on their profile. After that, the respondents reported under which conditions they had added someone to their list of contacts, in general. The response options were *yes* or *no*. Multiple options could be chosen from the following: if people send me a request (*request*), to get to know someone (*get to know*), if I met someone previously (*met before*), if it is a friend of a friend (*friend of friend*), if that person looks interesting (*interesting*), if I know him well (*well-known*) and if he is popular or famous (*popular*). Finally, respondents were asked to select from a list the type of contacts they already have on their profile by answering *yes* or *no*. Categories were collapsed into *known from the Internet*, *family*, *friends* (i.e. friends, close friends, sports/hobby friends, and school friends), and *other* (i.e. friends of friends, colleagues, and acquaintances). Next, respondents indicated from which category they had the most contacts.

*Information Disclosure*³. Next, to measure information sharing, the information shared on the profile was differentiated from the information shared through public posts. Participants were asked to indicate whether they shared each of the following 12 types of profile information using *yes/no* questions: *name*, *age*, *gender*, *birthday*, *address* (city), *address* (street name and number), *e-mail*, *relationship status*, *current work or school*, *religion*, *interests*, and *phone number*. Afterwards, respondents were asked how frequently they shared a public post on their profile by using a 7-point scale: 1) *never*; 2) *once a month*; 3) *several times a month*; 4) *once a week*; 5) *several times a week*; 6) *once a day*; 7) *several times a day*. Furthermore, respondents were asked if they had discussed the following 11 topics in their public posts through *yes/no* questions: *health*, *school/work results*, *finance*, *relationships*, *family*, *religion*, *politics*, *parties*, *emotional topics*, *personal success*, and *personal concerns*. Respondents who answered *yes* also indicated whether they discussed the topic *elaborately*, *quite elaborately*, or *not elaborately*. Generally, if shared, the topics were not discussed elaborately by the majority of respondents (66.9% to 84.6%). The variable was therefore reduced to a dichotomous *shared* or *not shared* scale.

Primary use SNSs. Respondents were asked to select their main reason for using their profiles from the following list of options: *meet new people* (i.e. to make new friends and to get to know others better), *socialize* (i.e. to see what others I know are doing, to stay in touch with people I know more often, and to talk with people I know more often), *peer pressure* (i.e. everyone I know also uses it), *self-presentation* (i.e., to show who I am), *work/school related* (i.e., for my work

³ These scales are also used in Chapter 2 (p.35) and from the same dataset.

or school), and *other*. As less than 2% of all respondents reported *work/school related* as main reason, this reason was included in the category *other* for analysis. Similarly, only 2% of all the respondents reported *self-presentation* as main reason. However, this category was maintained as it is directly related to a hypothesis.

Privacy settings. Respondents were asked whether they had accessed the privacy settings menu (*accessed*), whether they had limited access to their profile for contacts only (*outside*) and if they made groups between their contacts and manipulated the information that was available for each group (*inside*). Response possibilities were *I know and I have done so*, *I know how to but I did not do so*, *I don't know how, but I let someone do it*, and *I don't know how and I have not let someone do so*. The majority of respondents reported having manipulated the settings themselves or not at all. Therefore, responses were collapsed into the dichotomous scale *done* and *not done*.

ANALYSIS PLAN

The main focus in this article is to explore the differences among the age groups for several different variables. One-way ANOVA and χ^2 analysis have been used for this purpose. For each variable the appropriate analysis has been made and the main statistic has been investigated to give an indication of significant differences among the age groups. If this statistic is significant, the differences among the individual age groups can be explored for patterns. Bonferroni post-hoc analyses are done in case of significance in the one-way ANOVA. Adjusted standardized residuals are investigated to interpret significant χ^2 analysis; for significant χ^2 results an adjusted standardized residual greater than 1.9 (or smaller than -1.9) indicates that there is a significant difference from the total percentage.

RESULTS

RELATIONSHIP DEVELOPMENT

To investigate the behaviour on SNSs in relation to relationship development, the number of contacts respondents reported was compared first. A significant age effect was found concerning the number of contacts respondents reported, $F(2, 999) = 61.84, p < .001, \chi^2 = 0.11$. Post-hoc analysis showed that adolescents ($M = 197, SD = 173.15$) reported significantly more contacts than young adults ($M = 123, SD = 89.53$), who in turn reported significantly more contacts than adults

($M = 74$, $SD = 160.71$). These results support the hypothesis (1a) that adolescents have more contacts on SNSs compared to young adults and adults.

Table 1. — *Respondents' Reasons to Add a Contact*

	Adole- scents	Young adults	Adults	Total	χ^2 (df 2)
N	372	277	353	1,002	
Request	26.1%	33.6%	38.8%	32.6%	13.515**
Ad. Res	-3.4	0.4	3.1		
Get to know someone	12.1%	10.1%	6.2%	9.5%	7.434*
Ad. Res	2.2	0.4	-2.6		
Met before	57.3%	57.0%	34.6%	49.2%	46.743***
Ad. Res	3.9	3.1	-6.8		
Friend of friend	17.7%	17.0%	11.0%	15.2%	7.268*
Ad. Res	1.7	1.0	-2.7		
Interesting	19.1%	29.2%	15.3%	20.6%	19.265***
Ad. Res	-0.9	4.2	-3.0		
Well-known	71.5%	73.6%	68.3%	71.0%	n.s.
Ad. Res	0.3	1.2	-1.4		
Popular	7.0%	1.1%	2.0%	3.6%	20.068***
Ad. Res	4.4	-2.6	-2.0		

Note. χ^2 statistic significant at * $p < 0.05$ level ** $p < 0.01$ level *** $p < 0.001$ level.

Ad. Res. = Adjusted Standardized Residual. A residual with an absolute value of 2.0 or higher indicates a significant deviation from the total percentage.

Next, the reasons for adding a contact to a profile were explored to investigate the hypothesis (1b) that adolescents will be more likely to add contacts on SNSs they don't know to explore possible friendships compared to young adults and adults. Table 1 provides an overview of the respondents' responses. Only 9.5% of all respondents reported that they added contacts in order to get to know them. Instead, most respondents add contacts that are well-known to them (71.0%), followed by adding contacts who they have met before (49.2%), when requested (32.6%), who are interesting (20.6%), who are a friend of a friend (15.2%), or because they are popular (3.6%).

With the exception of adding contacts who are well-known, which was the category selected by the majority of all respondents from each age group, an age effect was found for all reasons. Inspecting the cells with an adjusted standardized residual with an absolute value of 2.0 or higher shows which age groups deviate significantly from the total percentage of respondents who report a specific reason. Significantly fewer adolescents, but more adults reported the reason *Request*, $\chi^2(2, 1002) = 13.51, p = .001$. The reason *Get to know someone* was reported by more adolescents and fewer adults, $\chi^2(2, 1002) = 7.43, p = .024$. The reason *Met before* was reported by significantly more adolescents and young adults, but by fewer adults in support of the hypothesis (1b), $\chi^2(2, 1002) = 46.74, p < .001$. The reason *Friend of friend* was reported by significantly fewer adults, $\chi^2(2, 1002) = 7.27, p = .026$. Significantly more young adults, but fewer adults reported the reason *Interesting*, $\chi^2(2, 1002) = 19.27.41, p < .001$. Finally, the reason *Popular* was reported by significantly more adolescents, but by fewer young adults and adults, $\chi^2(2, 1002) = 20.01, p < .001$.

The third hypothesis concerning relationship (1c) development predicted that adolescents would be more likely to report that they mainly used SNSs to meet new people compared to young adults and adults. A significant age effect was found, $\chi^2(8, 1002) = 54.15, p < .001$, and Table 2 gives an overview of the reported primary reasons for using the profile. Few respondents reported to mainly use their profile to meet new people (3.1%). Instead, most respondents reported to use their profile to socialize with people they already knew (63.8%), followed by *peer pressure* (16.8%), *other* (14.5%), and *self-presentation* (1.9%). Upon investigating the adjusted standardized residuals to explore the age effect it was apparent that significantly more young adults, but significantly fewer adolescents, report *socialize* as main reason and significantly more adolescents report *peer pressure* as the main reason for using SNSs. The results provide no support for the hypothesis (1c) as no differences were found between the age groups for *meet new people*.

Table 2. — *Respondents' Reasons to Use Their Online Profile*

	Adole- scents	Young adults	Adults	Total	χ^2 (df 8)
N	372	277	353	1,002	54.15***
Meet new people	4,0%	1.4%	3.4%	3.1%	
Ad. Res	1.3	-1.9	0.4		
Socialize	55.4%	74.7%	64,0%	63.8%	
Ad. Res	-4.2	4.5 0.1			
Peer pressure	26.3%	10.8%	11.3%	16.8%	
Ad. Res	6.2	-3.1	-3.4		
Self-presentation	1.9%	1.8%	2.0%	1.9%	
Ad. Res	0.0	-0.1	0.1		
Other	12.4%	11,2%	19.3%	14.5%	
Ad. Res	-1.5	-1.8	3.2		

Note. χ^2 statistic significant at * $p < 0.05$ level ** $p < 0.01$ level *** $p < 0.001$ level.

Ad. Res. = Adjusted Standardized Residual. A residual with an absolute value of 2.0 or higher indicates a significant deviation from the total percentage.

Finally, respondents' contact lists were explored. The majority of respondents reported that they had *friends* and *family* among their contacts, 96.2% and 92.7% respectively, while only 17.7% of respondents had contacts from *known from the internet*, and 86.3% had contacts from *other*. In the fourth hypothesis (1d) we formulated the expectation that adults will be more likely to have family members as contacts on SNSs compared to young adults and adults. Of all the respondents, 21.2% reported *family* as the main contact category. A majority of 60.8% reported *friends* as the main contact category, while only 2.8% of respondents reported to have *known from the internet* as main contact category. In the end, 15.4% of respondents reported having *other* as their main contact category.

Table 3. — Respondents' Main Category of Contacts on Their Online Profile

	Adole- scents	Young adults	Adults	Total	χ^2 (df 6)
<i>N</i>	372	277	353	1,002	124.543***
Family	11.3%	15.2%	36.0%	21.2%	
Ad. Res	-5.8	-2.8	8.5		
Friends	78.5%	63.2%	40.2%	60.8%	
Ad. Res	8.8	1	-9.8		
Known f./t. internet	1.3%	2.9%	4.2%	2.8%	
Ad. Res	-2.1	0.1	2.1		
Other	8.9%	18.8%	19.5%	15.4%	
Ad. Res	-4.4	1.8	2.7		

Note. χ^2 statistic significant at * $p < 0.05$ level ** $p < 0.01$ level *** $p < 0.001$ level.

Ad. Res. = Adjusted Standardized Residual. A residual with an absolute value of 2.0 or higher indicates a significant deviation from the total percentage.

F./t. = from the.

Table 3 shows the respondents' responses that have been divided by age group to the question from which category they have most contacts on their profile. An age effect was found, $\chi^2(6, 1002) = 124.54$, $p < .001$. Investigation of the adjusted standardized residuals shows that, in support of the hypothesis (1d), the category *family* was reported as the main category by more adults, but fewer adolescents and young adults. *Friends* was reported as main category by significantly more adolescents, but fewer adults. *Other* and *known from the internet* were reported by significantly fewer adolescents, while significantly more adults reported these categories as their main contact category.

IDENTITY DEVELOPMENT

Next, the behaviour on SNSs in relation to identity development was investigated. The first hypothesis (2a) concerning identity development predicted that adolescents and young adults post more frequently on SNSs compared to adults. Of all respondents, 14.6% reported to post daily (once or several times), 38.5% to post weekly, 34.1% to post monthly, and 12.8% to post never. An age effect was found to indicate differences between the age groups, $F(2, 999) = 21.61$, $p < .001$, $\eta^2 = 0.04$. Post-hoc analysis shows support for the hypothesis (2a): both adoles-

cents ($M = 4.07$, $SD = 1.78$) and young adults ($M = 3.85$, $SD = 1.60$) report a significantly higher frequency of posting compared to adults ($M = 3.25$, $SD = 1.74$), but they do not differ significantly from each other.

The following hypothesis (2b) concerning identity development predicted that adolescents and young adults tend to post more topics on SNSs compared to adults. First, the topics addressed in the posts on the profile were investigated. On a whole, most respondents shared posts concerning family (50.6%), parties (66.8%), school or work results (48.5%), and personal achievements (53.3%), while hardly anyone shared posts concerning money (4.5%), religion (7.3%), or politics (12.3%). Generally, if shared, the topics were not discussed elaborately by the majority of respondents (66.9% to 84.6%). A significant age effect was found, $F(2, 999) = 38.09$, $p < .001$, $\eta^2 = 0.07$. Post-hoc analysis again showed support for the hypothesis (2b): young adults ($M = 4.49$, $SD = 2.94$) share significantly more topics than adolescents ($M = 3.52$, $SD = 2.63$), and both adolescents and young adults share significantly more topics than adults ($M = 2.61$, $SD = 2.57$).

Next, the amount of profile information that the respondents shared was investigated. Overall, few respondents shared sensitive information on their profile, such as their telephone numbers (4.1%) or street address (7.1%), whereas basic information, such as name (97.8%), age (88.8%), gender (93.8%) and birthday (80.5%), were disclosed by most respondents. A significant age effect was found for the number of topics shared by respondents, $F(2, 999) = 10.75$, $p < .001$, $\eta^2 = 0.02$. Post-hoc analysis showed partial support for the hypothesis (2b): young adults shared significantly more profile information ($M = 7.05$, $SD = 2.21$) compared to both adolescents ($M = 6.26$, $SD = 2.01$) and adults ($M = 6.49$, $SD = 2.34$), with the latter not differing from each other.

The third hypothesis (2c) concerned whether adolescents and young adults would be more likely to report that they mainly used the SNSs for self-presentation compared to adults. Table 2 showed that less than 2% of all respondents reported self-presentation as primary reason for using SNSs and no differences were found between the age groups. As a consequence, these results do not support this hypothesis (2c).

PRIVACY SETTINGS

Our final research hypothesis concerned the use of privacy settings by adolescents, young adults, and adults. More young adults are expected to have adjusted their privacy settings compared to adolescents and adults. Table 4 provides an

overview of the responses concerning the adjustment of privacy settings. Of all the respondents, 88.9% have accessed the privacy settings menu (*Accessed*), with 86.3% having adjusted the access to their profile for contacts only (*Outside*), and 69.3% making groups between their contacts and manipulating which information is available for each group (*Inside*).

Table 4. — *Manipulation of Privacy Settings by Respondents*

	Adole- scents	Young adults	Adults	Total	χ^2 (df 2)
<i>N</i>	372	277	353	1,002	
Accessed (% done)	90.9%	94.9%	82.2%	88.9%	28.042***
Ad. Res	1.5	3.8	-5		
Outside (% done)	86.8%	92.1%	81.3%	86.3%	15.335***
Ad. Res	0.4	3.3	-3.4		
Inside (% done)	71.8%	74.0%	62.9%	69.3%	10.766**
Ad. Res	1.3	2.0	-3.2		

Note. χ^2 statistic significant at * $p < 0.05$ level ** $p < 0.01$ level *** $p < 0.001$ level.

Ad. Res. = Adjusted Standardized Residual. A residual with an absolute value of 2.0 or higher indicates a significant deviation from the total percentage.

A significant age effect was found for accessed, $\chi^2(2, 1002) = 28.04, p < .001$, outside, $\chi^2(2, 1002) = 15.34, p < .001$, and inside, $\chi^2(2, 1002) = 10.77, p = .005$. In support of the hypothesis (3), significantly more young adults reported accessed, outside and inside, while significantly fewer adults report to having done so compared to the total percentage.

DISCUSSION

The goal of this chapter was to investigate whether the online behaviour of adolescents, young adults, and adults could be linked to developmental goals. For this purpose the developmental goals of relationship and identity development (through self-presentation) were distinguished. Moreover, through this analysis we hoped to gain further insight into whether young people are indeed the risky users of SNSs that they are often claimed to be. Overall, the results support the idea that the differences in behaviour on SNSs between adolescents, young adults, and adults are related to their differing developmental goals.

Next, the findings in relation to each of the developmental goals will be discussed.

The reported behaviour on SNSs by respondents in this study supports the hypotheses that relationship development related behaviour was primarily present among adolescents when compared to young adults and adults. In keeping with previous findings, adolescents reported to have most contacts which were primarily friends, but they were also more likely than adults to add contacts so that they could get to know them on their SNS profile (Christofides et al., 2012; Pfeil et al., 2009). These findings align with the fact that relationship development is an important developmental goal during adolescence (Boneva et al., 2006, p. 618; Brown, 1990) as both behaviours seem related to finding new friendships. We also found that more than young adults and adults, adolescents reported that they make use of SNSs due to peer pressure, which further emphasizes the important role peers play during adolescence.

Adolescents have only begun to develop their social networks and to experiment with friendships. SNSs offer an easy way for young people to invite and interact with different people in search of friendships. In fact, not having a profile on SNSs is associated with a social loss for young people as they miss out on the interactions between their friends that take place online (Raynes-Goldie, 2010).

Overall, only a few respondents reported that they had added unknown contacts or that they primarily used their SNS profile to meet new people. Instead, respondents reported adding contacts already known to them and that they used the sites to socialize with their contacts. This result replicates previous studies stating that SNSs are primarily used to interact with people already known to the individual and to maintain existing relationships as opposed to forming new relationships (Lampe et al., 2006; Lenhart & Madden, 2007; Subrahmanyam & Greenfield, 2008).

Furthermore, the results showed that the behaviour of older respondents related to the need for relationship development differed as predicted. During young adulthood, the need to explore new friendships was expected to become less as young adults instead focus more on developing existing relationships into more intimate and satisfying relationships (Erikson, 1968). This was reflected in the results as young adults were among the fewest to report using SNSs to meet new people, but instead most of them reported to socialize on the sites.

Adults in turn, were expected to need SNSs for relationship development the least. Previous work has argued that during adulthood, less time is spent with friends (Blieszner & Roberto, 2004, p. 172; Hartup & Stevens, 1999). Indeed, adults reported having the fewest contacts and a third of the adults reported having

primarily family as their main contact group, while only 10 and 15 percent of adolescents and young adults reported this. In addition, more adults than adolescents reported that they add contacts after a request was sent which indicates a more passive approach to their online profile compared to adolescents who are actively making use of the sites to explore new friendships.

Similar support was found for the hypotheses concerning identity development. Adolescents were found to share more information and post more frequently compared to adults. This behavioural difference is likely related to the fact that adolescents are still actively developing their identity in the presence of their peers (Brown, 1990, p. 179; Erikson, 1959) whereas adults have already established stable identities. According to Arnett, the need for identity development persists into young adulthood (2006). Our findings reflected this as young adults reported to post as frequently as adolescents and to address even more topics.

However, the results suggest that information sharing on SNSs is not necessarily primarily related to the need for identity development for respondents. Only 1.9 percent of all respondents reported to use the site primarily for self-presentation, while over 60 percent of all respondents reported that they used SNSs to socialize with their friends. The differences in information sharing could instead also be related to the different phases of relationship development that adolescents and young adults find themselves in. Posting information on SNSs has previously been related to relationship development (Steijn & Schouten, 2013) thus explaining why adolescents and young adults post more frequently on SNSs as compared to adults. In addition, young adults post more diverse topics compared to adolescents, which is probably because young adults are in the process of developing more intimate and satisfying relationships (Erikson, 1968).

Finally, young adults were found to make more use of the privacy settings provided by SNSs as compared to adults. This supports previous findings which found that young adults make more use of the privacy settings compared to adolescents and adults (Christofides, et al., 2012; Madden & Smith, 2010). It was also found that young adults are the most active users of the privacy settings which could be related to the fact that they have the strongest incentive to keep their offline identity separate from their online identity. An increasing number of reports claim that employers screen future employees' online profiles (Abril, Levin, & Del Riego, 2012; "Réseaux sociaux: comment réagissent les recruteurs face à un détail gênant sur un candidat", 2013).

The results show the importance of distinguishing young adulthood from both adolescence and adults as a distinct age group. Due to many societal changes taking place during young adulthood—during this phase in life most individuals leave their parental homes, start working, and some even marry—a great deal of variation can be expected between young adults, even more so than for either adolescents or adults. For example, while one could make rather accurate predictions on the marital state of a 16-year-old and a 32-year-old, such accuracy lacks the prediction on the marital state of a 25-year-old (Arnett, 2000, p. 471). Future studies are therefore recommended to distinguish young adults from alongside adolescents and adults when discussing young versus old.

Even though we have interpreted the results from a developmental perspective, several alternative explanations might exist for the findings presented. One alternative explanation for some of the findings could be that simple time constraints associated with adult life (e.g., work, chores and family) explain why adults have fewer contacts and post less often. Christofides and colleagues (2012) for example found that a relationship existed between the fact that adolescents spend more time on SNSs and their higher information disclosure. However, the results here do not only report differences in frequency or number of contacts, but also differences concerning the motivation to use SNS and type of contacts, which in turn, are also consistent with a developmental perspective, but which should not necessarily be affected by time constraints. In other words, although this chapter cannot rule out all of the alternative explanations that could possibly underlie the differences observed between young and old, the differences presented generally appear to have a consistent link with a developmental perspective. As such, taking the developmental perspective into account may play a vital role in our understanding of online behaviour and the differences herein between young and old.

LIMITATIONS AND RECOMMENDATIONS

As with many other studies, several limitations should be taken into account when interpreting the results presented here. First, respondents were only asked to report their primary use of the site. It is possible that for many individuals self-presentation was a secondary reason to have an SNS profile. As a result, the number of individuals who use the site to meet new people or for self-presentation is most likely underrepresented here. The current study decided to ask only about their single most prominent use in order to force respondents to make

a decision in regard to which motivation was the most important to them. Future studies should consider obtaining both all the uses respondents have for their SNS profiles and which ones they consider to be the most important.

Second, future studies may want to take a closer look at the relationship between online behaviour and developmental goals. The exact role of developmental goals was not yet clear when data were collected. As a result, our questionnaire did not include any measures that directly assess developmental goals. Survey material is available which allows the assessment of developmental goals such as identity development, for example, the “Ego Identity Process Questionnaire” or the “Extended Objective Measure of Ego Identity Status II” (Balistreri, Busch-Rossnagel, & Geisinger, 1995; Schwartz, 2004). Future studies could include such measurements in their designs so as to allow that a direct analysis of the relationship between developmental goals and behaviour on SNSs or other social media be made.

Third, the results presented here indicate that a developmental perspective is feasible in order to understand online behaviour and the differences between young and old. One difficulty at this time is that SNSs are a relatively new technological development, and as a consequence the individuals who are supposedly a part of the new young generation are at the moment still young and therefore they are also expected to differ in behaviour from older individuals from a developmental perspective.

Differences in online behaviour are likely related to both generational and developmental factors. The internet and SNSs offer new ways for social interaction and how we communicate with each other. This makes it inevitable that the current young generation who grows up with these new technologies will differ from previous generations. However, it is important to be able to distinguish between which aspects of online behaviour are developmental characteristics and which aspects are generational characteristics (Bolton et al., 2013). This study has shown that a great deal of online behaviour appears to be related to developmental factors, which suggests that the current young generation’s online behaviour is not necessarily much different from how previous generations behaved offline (boyd, 2008; Herring, 2008; Marwick et al., 2010).

Ideally longitudinal data are required to provide conclusive evidence, whether we are dealing with a generational difference—the observed behaviour will persist over time and the young generation has become opener than older generations before them—or whether they are developmental, which suggests that the observed behaviour will change as the individual grows older and young

individuals today will share less when they grow older. Yet, based on the results presented here, it can be concluded that a developmental perspective to understand the differences between age groups is a viable option.

CONCLUSION

The developmental perspective as it has been presented in this chapter provides a plausible manner of understanding online behaviour of adolescents and as such a plausible alternative for the generational perspective. In discussions regarding the online behaviour of young people, they are often labelled in generational terms, e.g. as “digital natives” or “millennials” (e.g., Howe & Strauss, 2009; Nussbaum, 2007; Palfrey & Gasser, 2008; Prensky, 2001). Such labels do not only ignore the diversity between children (Marwick et al., 2010), but they also overlook the developmental characteristics of this age group. From an academic vantage point in particular, we should avoid making precocious categorizations when referring to the behaviour of young people online.

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CHAPTER 4

Privacy under construction: a developmental perspective regarding the different perceptions of privacy between younger and older individuals.

ABSTRACT

We present a developmental perspective regarding the difference in perceptions towards privacy between young and old. Here, we introduce the notion of privacy conceptions: the specific ideas that individuals have regarding what privacy actually is. The differences in concern regarding privacy often found between young and old are postulated as the result of the differences found in their privacy conceptions, which are subsequently linked to their developmental life stages. The data presented has been obtained through a questionnaire distributed among adolescents, young adults, and adults and provides support for this developmental perspective. This study is one of the first to include adolescents when investigating the concern regarding privacy among young and old. The results show that the privacy conception held by adolescents indeed differ from those held by young adults and adults in keeping with the expectations as seen from a developmental perspective. In addition, the area in which the differences in privacy conceptions are found also reflect the strongest relationship with concern. As such, these findings present an alternative perspective to the commonly held notion that young people are less concerned about privacy.

Chapter adapted from;

Steijn, W.M.P., & Vedder, A. (2014). Privacy under construction: a developmental perspective on the differences in privacy attitudes between younger and older individuals. *Submitted for publication.*

INTRODUCTION

Young people are said to be less concerned with their privacy compared to older people and that they value their privacy less (Nussbaum, 2007; Palfrey & Gasser, 2008). This view rests mainly on studies that show that young people share a great deal of information on social network sites (SNSs) (Acquisti & Gross, 2006; Debatin, Lovejoy, Horn, & Hughes, 2009; Govani & Pashley, 2005) and anecdotal reports in the media which show how such disclosures can lead to personal misfortune (e.g., Ferenstein, 2013; Levy, 2009; O'Dell, 2011). However, investigations of concern regarding privacy provide mixed signals. Although a significant number of studies report that that younger people are indeed less concerned with privacy than older individuals (Fox et al., 2000; "Online privacy worries increase with age", 2009; Paine, Reips, Stieger, Joinson & Buchanan, 2007; Zukowski & Brown, 2007), other studies instead show that young people are in fact concerned with privacy and do not differ from older people in terms of concern about privacy (e.g., Hoofnagle, King, Li, & Turow, 2010; Madden & Smith, 2010; Tufekci, 2012). Moreover, most of these studies only included respondents aged 18-years-old and older, and they provide no information on the concern felt regarding privacy by adolescents, whereas adolescents are intensive users of social media such as SNSs (Lenhart, Purcell, Smith, & Zickuhr, 2010; Steijn, in press).

In this chapter, we will further investigate the differences in concern regarding privacy between young and old. Up until now, most of the studies investigating this concern included respondents 18-years-old and older, and they did not provide any information on the concern that adolescents feel. Yet, adolescents are intensive users of social media such as SNSs (Lenhart et al., 2010; Steijn, in press) and their online behaviour and felt concerns is of relevance in the privacy debate, particularly when it concerns the differences between young and old. Therefore, we have included adolescents as well in our investigation regarding privacy concerns. We subsequently argue that both the informational liberality of youth and the allegedly lesser concern regarding their privacy can be explained on the basis of more subtle reasons than the belief that youth no longer value privacy. For legislators and policymakers, as well as for internet entrepreneurs, it is important to understand these reasons.

One important problem in the current privacy debate that obstructs a clear view to children's and youth's vulnerability regarding privacy is that it is generally assumed that all individuals, old and young, share exactly the same idea about what privacy actually is. Against the background of the ubiquitous internet and the increasing popularity of SNSs and mobile devices, the privacy debate is currently

focussing on how information that is so easily shared on the internet can be protected, and on the data that is being gathered through new (mobile) technologies. Risks related to data mining (Andrews, 2012) and identity theft (Noda, 2009; Timmer, 2009) as well as adverse side effects of sharing information online have received much attention, both in scholarly and public debates. It should not come as a surprise that these risks play a predominant role in regard to what privacy signifies for those who are actively involved in these debates, and who are aware of this through the media, i.e., almost exclusively adults. Equally unsurprisingly is the fact that these adults easily assume that anyone who uses the internet should be concerned with precisely these very same privacy risks. As a consequence, the online behaviour of youth—who appear apparently unimpressed by data miners and identity thieves in their use of SNSs—is thought to reflect a lack of concern for their privacy. Findings showing young users of SNSs who disclose a great deal of personal information and who are concerned at the same time about their privacy are often considered paradoxical (Acquisti & Gross, 2006; Fogel & Nehmad, 2009; van de Garde-Perik, Markopoulos, de Ruyter, Eggen, & IJsselsteijn, 2008). The paradox unravels, however, as soon as we start to take into consideration that there might be slight—but significant—differences in what adults think about when talking about privacy, on the one hand, and what youth’s specific ideas are regarding privacy, on the other.

We argue that, to put it broadly, youth’s understanding of privacy differs from older people’s understanding in such a way that similar situations, such as the sharing of information on SNSs, can result in different levels of concern. We hypothesize that this is related to the developmental differences between young and old. In order to underpin these claims, we first, provide some additional background to the notion of privacy and to our developmental perspective. Subsequently, the exact research hypotheses will be formulated, followed by methodological considerations, research results and discussion of the results.

PRIVACY CONCEPTIONS: THE IMPORTANCE OF CONTEXT

Since the middle of the previous century, it has become fashionable to start theoretical contributions on privacy while mentioning the “conceptual chaos” surrounding the notion of privacy (Johnson, 1989, p. 157; Nissenbaum, 2010, p. 67; Parent, 1983, p. 341; Prosser, 1960). Upon further consideration, the supposed conceptual chaos does not appear to be that great. Over the years nearly all of the aspects that were already present in the definition of the term when it was

originally introduced by Warren and Brandeis (1890) have somehow been retained. Warren and Brandeis define privacy as a right of individuals to be protected from the unsolicited distribution of information regarding their private life, particularly via publications. According to them, private life concerns emotions, sensory experiences, feelings, thoughts, and dealings, and extends further to a diversity of aspects pertaining to life including personal relationships, writings and statements (Warren & Brandeis, 1890, p. 195). A quick review of both the societal and the theoretical debates on privacy since the end of the nineteenth century shows that there are no significant differences or changes of opinion as to the core of the notion (see Vedder, 2011).

Four aspects of privacy are generally distinguished in privacy theories: the physical aspect, the social aspect, the psychological aspect, and the informational aspect (Burgoon, 1982; Burgoon et al., 1989; Vedder, 2011). The physical aspect concerns the freedom from unwanted intrusion or surveillance. This aspect relates, for example, to the violation associated with burglary, but also to the increasing camera surveillance in society. We will refer to this aspect as *personal space*. The social aspect concerns our efforts to manage and control our social relationships. This aspect relates, to give an example, to being able to act differently when with friends as opposed to with family. We will refer to this aspect as *relationships*. The psychological aspect concerns the freedom to make decisions freely and protection from persuasive pressures. This aspect relates, for example, to being able to vote in a democracy without outside pressure. We will refer to this aspect as *autonomy*. The informational aspect concerns the availability of (online) information. This aspect relates to the gathering of personal data, for instance, on the internet through cookies or other online tools. We will refer to this aspect as *personal information*. Vedder argues that, over time, shifts in the focus and emphasis of privacy theories take place as to what is considered to be the predominant aspect of privacy, what are the values served by privacy, and how the notion is subsequently best defined (Vedder, 2011). Interestingly, these shifts in focus come hand in hand with the changes that take place in the general societal background of those who articulate them.

It seems to be typical of privacy's function that it offers protection to individuals against perceived privacy vulnerabilities. These vulnerabilities could refer to monetary or physical damage, but also emotional damage. These perceived vulnerabilities can transform as a result of technological developments, changes in socioeconomic relations (e.g., blurring lines of demarcation between the private and the public sector), and changing conventions and traditions (Vedder, 2001).

The introduction of the personal computer in the late 1970s, for instance, inspired the tendency to define privacy more and more in terms of access to individuals through data and information rather than in terms of spatial access, interference with personal decisions, or relationships. While defining privacy in the latter terms has not disappeared, the emphasis on the informational aspect and the growing attention being paid to vulnerabilities coming along with personal data and information cannot be overlooked. Perceived vulnerabilities related to accessibility change with the context. As perceived vulnerabilities change, so does the emphasis and the focus of the scholarly definitions.

Different focusses of scholarly definitions of privacy are a result of changes in the perceived vulnerabilities, which in turn appear to transform with the changes and differences in the larger societal context. Something similar can also be observed in regard to the specific idea held by groups of individuals of what privacy refers to.

In the remainder of this chapter we will refer to an individual's specific idea concerning what privacy exactly is in terms of their privacy conception¹. In other words, when talking about an individual's concern regarding privacy, his or her privacy conception defines exactly what it is he or she is concerned about. The privacy conception of an individual affects his or her perceived privacy vulnerability in a situation and in turn, the concern felt. In as much as how other individual characteristics—such as perceived self-efficacy in protecting oneself or whether the individual is a privacy fundamentalist, privacy unconcerned or a privacy pragmatic (Westin, 2003)—this will have an impact on the concern that an individual will feel as well.

Thus far little attention has been paid to establishing the possible differences in privacy conceptions between individuals or groups of individuals. Instead, most studies addressing privacy have generally focussed on the availability of personal information (e.g. Fox et al, 2000; Hoofnagle, et al., 2010; Madden & Smith, 2010; Zukowski & Brown, 2007). Here we will investigate potential differences in privacy conception between young and old from a developmental perspective and the relationship between these privacy conceptions and reported concern. We will distinguish between adolescents (12- to 19-year-olds), young adults (20- to 30-year-olds) and adults (31-year-olds and older).

The focus on privacy conceptions held by groups of individuals may change as they grow older and their developmental goals are achieved, and as a result their perceived vulnerabilities, change. Although the privacy conceptions of different groups can be expected to be basically very similar, specific aspects

¹ We follow Gallie (1955-56) in distinguishing concepts (definitions as theoretical constructions) from conceptions (personal views of definitions).

may be more prominent in the conceptions of one age group than in those of another. By the same token, the focus and emphasis of the privacy conceptions of the old may be different from those of the young, depending on the vulnerabilities they typically perceive. As a result, differences can be expected with regard to the kinds of situations that individuals from different age groups typically associate with privacy.

THE DEVELOPMENTAL PERSPECTIVE

A developmental perspective is increasingly being used to understand young people's behaviour on SNSs (Christofides, Muise, & Desmarais, 2012; Peter & Valkenburg, 2011; Steijn, in press). To put it simply, a developmental perspective suggests that observed behaviour online can be explained by the social needs and desires that are related to a specific life phase. Young and old people exhibit different behaviour as they gratify different social needs and make different trade-offs.

The online behaviour of adolescents is remarkably similar to the ordinary style of socializing—sharing personal information and making friends—that youth has always exhibited in the school yard (boyd, 2008; Herring, 2008; Marwick, Diaz, & Palfrey, 2010). Several social goals have been identified as being particularly prominent during adolescence. Among these goals are the need for identity formation and the need for relationship formation (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; boyd, 2008; Bukatko, 2008; Marwick et al., 2010; Mesch & Talmud, 2010; Peter & Valkenburg, 2011; Steinberg, 2008). The internet and specifically SNSs have become important social tools for young people (Ellison, Steinfield, & Lampe, 2007; Lampe, Ellison, & Steinfield, 2006; Wolak, Mitchell, & Finkelhor, 2002). Adolescents establish their reputations and identities through these sites (Boneva et al., 2006; boyd, 2008; Marwick et al., 2010; Valkenburg, Schouten, & Peter, 2005). The opportunities that SNSs provide for identity experimentation and for getting in touch with new potential friends are important reasons why SNSs are popular among young people.

The developmental goals of adolescents are also important for the specific articulation of their privacy conceptions. As we argued above, adolescents' main interests are to interact and hang out with their friends, experiment with friendships, and experiment with their identity in seclusion from their parents and other grown-ups. Previous studies have shown that adolescents primarily seek privacy from known adults such as their parents and teachers (boyd & Marwick,

2011; Livingstone, 2008). Here we will expand on this observation by arguing that the developmental goals of adolescents result in a different focus in privacy conception; one in which adolescents' main vulnerability is to their parents' intrusions on their relationships with friends, while the risks of data mining or identity theft are less prominent. Adolescents may see the internet and SNSs primarily as an opportunity to escape from the scrutiny of the parental supervision in their parental home and to obtain social gratification, rather than to view it as a privacy risk. This is different from adults for whom the informational threats posed by SNSs in the forms of observations and interference by banks, insurance companies, authorities, future employers and ill-willing criminals are more prominent. These parties can be expected to only start playing an increasing role in the lives of young adults. During young adulthood, individuals often find jobs and move out of the parental home, and generally they become more self-sufficient and independent (Arnett, 2000). In comparison, adolescents still live relatively sheltered lives in the parental home. They are therefore expected to have a privacy conception with a relatively stronger focus on relationships compared to adults, since relationship formation and experimentation with existing relationships are important tasks during adolescence.

These differences in the privacy conceptions could explain a difference in concern regarding privacy between young and old. The concern with intrusions by authorities, business corporations, and criminals are often considered as a concern with privacy *tout court*. Therefore, it would appear only natural that young people report to be less concerned with privacy because it is precisely these factors that do not yet play a prominent role in their privacy conception. This does not mean that adolescents are completely blind to privacy risks connected to data mining, profiling and identity theft nor is it so that adults do not care at all for relational privacy. We argue that one or the other will be more prominent in the conception of privacy of individuals in different developmental life phases.

RESEARCH OBJECTIVES

Up until now, this chapter has set the stage and provided the main argument for a subtler view of youth's appreciation of privacy to be developed with theoretical background. We referred to the possible differences in privacy conceptions, which may be related to differences in the concern felt regarding privacy and to a developmental perspective in order to understand these differences.

The connection between the popularity of SNS and online behaviour, and the social needs typical of a certain age has received a fair share of attention already (Christofides et al., 2012; Peter & Valkenburg, 2011; Steijn, in press). The connection between age-related social needs and privacy conceptions in an attempt to explain the lower level of concern regarding privacy by young people has received no previous attention as far as we have been able to ascertain.

We expect that adolescents, young adults, and adults will display differences in their privacy conceptions that are related to their developmental life phase. The privacy conceptions will be assessed by looking at which situations individuals associate with privacy. The pre-selection of the situations from which the respondents could choose was originally inspired by the previously distinguished factors associated with privacy (Burgoon, 1982; Burgoon et al., 1989; Vedder, 2011).

Technological developments have shifted the focus on privacy for adults to a large extent to personal information. Yet, the privacy risks which are typically related to this aspect, such as those associated with the data mining by banks, insurance companies, governmental authorities and future employers or identity theft by ill-willing individuals, will play less likely an important role in the relatively sheltered lives of adolescents for whom the parents pay heed to these issues. With this in mind, we expect that more young adults and adults will associate privacy with situations involving personal information, such as sharing information on the internet or data mining, than adolescents.

H1a: More young adults and adults will associate privacy with situations involving personal information than adolescents.

Adolescents, on the contrary, are expected to be more inclined to associate privacy with situations involving relationships, such as having multiple relationships or being able to be alone with a friend. Interacting with friends is an important social need during adolescence (Peter & Valkenburg, 2011). Since adolescents often reside in their parental homes, they have to actively create situations in which they are secluded from their parents in order to be able to be alone with their friends. To represent these expectations, the following hypothesis was formulated:

H1b: More adolescents will associate privacy with situations involving relationships than young adults and adults.

In addition, we expect to find a relationship between the privacy conceptions of individuals and the concern they feel regarding their privacy. The internet is primarily a cause for concern in regard to informational privacy due to the associated risks of, for example, data mining and identity theft (Andrews, 2012; Noda, 2009; Timmer, 2009). We therefore expect that situations involving personal information, such as the sharing of information or data mining, will have the strongest relationship with concern. As a result, adolescents are expected to report that they experience less concern when compared to young adults and adults. We expect no differences in concern between both young adults and adults as their privacy conceptions include situations involving personal information more often. These expectations are represented in the following hypotheses:

- H2:** Concern regarding privacy will be more closely related to situations involving personal information when compared to situations involving personal relationships.
H3: Adolescents will report less concern regarding their privacy than young adults and adults.

METHOD

PROCEDURE

An online survey was conducted in the Netherlands by the research institute TNS-NIPO, which allowed respondents to participate from their own computers at home. Respondents were recruited through a stratified sampling procedure. From July 19 until August 4, 2011, 1,008 respondents who had profiles on an SNS completed the questionnaire. Respondents gave their consent to participate in the research survey (parents provided consent for individuals younger than 18 years of age) and upon completion of the questionnaire they received special points, which respondents could trade for discount coupons.

SAMPLE

Six respondents were removed from the sample as they explicitly stated that they had created their profiles merely for a different purpose (e.g., as requirement for using another site). Of the remaining 1,002 respondents, 125 (12.5%) have a profile only on Facebook, 365 (36.4%) have a profile only on Hyves, and 512 (51.1%) have a profile on both SNSs. Table 1 provides an overview of the distribution of

respondents over the age groups adolescents (12- to 19-year-olds), young adults (20- to 30-year olds), and adults (31-year-olds and older) and their age and gender.

Table 1. — *Sample Demographic*

	<i>N</i>	<i>Age</i>	<i>Gender (Male)</i>
Total	1,002	28.77 (15.52)	39.9%
Adolescents	372	14.60 (2.16)	47.0%
Young Adults	277	25.55 (3.10)	28.9%
Adults	353	46.22 (12.12)	41.1%

Note. Age provides means with standard deviation in brackets.

MEASURES

Concern regarding privacy. In order to assess how concerned individuals are with their privacy, they were asked whether they were concerned about their privacy, think their privacy is important, feel they have too little privacy, and consider the internet as a threat to their privacy. Ratings were made on a 4-point Likert scale from completely disagree (1) to completely agree (4). A reliability analysis provided an acceptable score ($\alpha^2 = 0.721$) for the 4 items to be combined into a single *privacy concern* scale. For this scale, higher scores indicate more concern regarding privacy in the form of feeling more concerned about privacy, privacy to be more important, having too little privacy, and believing the internet to be more of a threat to their privacy.

Privacy conceptions. Respondents were asked which of the situations they associated with privacy by answering simple yes-no questions. The situations were based on the four factors often associated with privacy: relationships, personal information, personal space, and autonomy (Vedder, 2011). Whereas the hypotheses only addressed situations involving personal information and relationships, the situations involving personal space and autonomy were also included for further exploration and completion. The situations involving relationships were *alone partner* (being able to be alone with partner or (girl)friend) and *various relationships* (being able to maintain different friendships and relations). The situations involving personal information were *data collection* (the government collecting information about me) and *information sharing* (putting information on the Internet). The situations involving personal space were *burglary* (when someone breaks into my house) and *cameras* (camera surveillance in a shopping

mall). Finally, the situations involving autonomy were *voting* (being able to vote for political parties) and *freedom of choice* (being able to determine what you do and buy). In addition, The variables *relationship*, *personal information*, *personal space*, and *autonomy*, were obtained by adding the scores of the two situations with yes (1) and no (0), resulting in a scale ranging from 0 to 2 for each privacy aspect.

RESULTS

PRIVACY CONCEPTION

We investigated the situations respondents reported that they thought were associated with privacy in order to gain insight into their privacy conceptions and the hypothesized differences. Table 2 gives an overview of the percentage of respondents from each age group which reported that they associated a specific situation with privacy. *Burglary* was associated with privacy by most respondents, whereas *voting* and *various relationships* were chosen the least by the respondents. Adolescents generally associated fewer situations ($M = 4.16$, $SD = 1.94$) with privacy than both young adults ($M = 4.73$, $SD = 2.06$) and adults ($M = 4.61$, $SD = 2.02$), $F(2, 999) = 7.822$, $p < .001$, $\chi^2 = .02$.

Chi-square tests were used to investigate differences between the age groups. A significant age effect was found for the situations *alone partner*, $\chi^2(2, 1,002) = 10.34$, $p = .006$, *data collection*, $\chi^2(2, 1,002) = 25.83$, $p < .001$, *information sharing*, $\chi^2(2, 1,002) = 6.19$, $p = .045$, *burglary*, $\chi^2(2, 1002) = 22.17$, $p < .001$, and *voting*, $\chi^2(2, 1002) = 15.20$, $p = .001$. Investigation of the adjusted standardized residuals shows that, compared to the total percentage, significantly fewer adolescents associated *data collection*, *information sharing*, *burglary*, and *voting* with privacy. *Burglary* was associated with privacy by both more young adults and adults compared to the total percentage. Furthermore, significantly more adults associated *data collection* and *voting* with privacy, whereas significantly fewer adults associated *alone partner* with privacy when compared with the total percentage.

The results presented in Table 2 support the first two hypotheses. Fewer adolescents associated situations involving personal information with privacy compared to young adults and adults. However, only adults were less likely to associate situations involving relationships with privacy compared to adolescents. Young adults were just as likely as adolescents to associate these situations with privacy. For *various relationships* this relationship is not statistically significant,

but a similar trend is visible in the variable *alone partner*, where this effect is significant. The data therefore only provide partial support for Hypothesis 2b.

Table 2. — *Situations Associated with Privacy by Respondents.*

Situations		Adole- scents	Young adults	Adults	Total	χ^2 (df 2)
	<i>N</i>	372	277	353	1,002	
Relationships	Alone partner	69.1%	71.1%	60.1%	66.5%	10.343**
	Ad. res.	1.3	1.9	-3.2		
	Various relationships	38.4%	37.2%	34.3%	36.6%	n.s.
	Ad. res.	0.9	0.2	-1.1		
Personal info.	Data collection	55.9%	70.4%	72.5%	65.8%	25.832***
	Ad. res.	-5.1	1.9	3.3		
	Information sharing	61.0%	69.7%	67.7%	65.8%	6.189*
	Ad. res.	-2.4	1.6	1.0		
Personal space	Burglary	66.1%	79.1%	79.9%	74.6%	22.175***
	Ad. res.	-4.7	2.0	2.9		
	Cameras	42.7%	46.6%	46.7%	45.2%	n.s.
	Ad. res.	-1.2	0.5	0.7		
Autonomy	Voting	22.8%	37.5%	42.5%	36.0%	15.196**
	Ad. res.	-3.7	0.6	3.1		
	Freedom of choice	53.5%	61.7%	57.5%	57.2%	n.s.
	Ad. res.	-1.8	1.8	0.2		

Note. χ^2 statistic significant at * $p < 0.05$ level ** $p < 0.01$ level *** $p < 0.001$ level.

Ad. Res. = Adjusted Standardized Residual. A residual with an absolute value of 2.0 or higher indicates a significant deviation from the total percentage. Info. = information.

RELATIONSHIP BETWEEN CONCERN AND CONCEPTIONS

Next, we investigated the second hypothesis whether concern regarding privacy is more closely related to situations involving personal information when compared to situations involving personal relationships. Table 3 gives an overview of the results obtained from a correlation analysis regarding *privacy concern* and

the privacy conception scales. Column 1 shows the correlations between the privacy conception scales and *privacy concern*. In support of the hypothesis, *personal information* was found to have the strongest relationship with *privacy concern* as indicated by the significant positive correlation. A similar relationship with *privacy concern* was found in the *personal space* and *autonomy* variables. No significant correlation was found for *relationship* and privacy concern.

Fisher's *r*-to-*z* transformations show that in support of the hypothesis, the correlation between *personal information* and privacy concern is significantly greater than the correlation between *relationship* and *privacy concern*, $z = 3.18$, $p < 0.001$. In addition, the correlation between *personal information* and privacy concern is also greater than the correlation of *personal space* and *privacy concern*, $z = 2.28$, $p = 0.011$, but only marginally greater than the correlation between *autonomy* and *privacy concern*, $z = 1.6$, $p = 0.055$. This result indicates that respondents who reported that they associated the situations involving personal information with privacy also reported to be more concerned about their privacy.

Table 3. — *Correlation Scores between Privacy Concern and the Privacy Conception Scales.*

	Mean	1.	2.	3.	4.	5.
1. Privacy concern	2.66 (.56)	–				
2. Relationship	1.03 (.78)	.05	–			
3. Personal information	1.32 (.74)	.19***	.17***	–		
4. Personal space	1.20 (.71)	.09**	.21***	.41***	–	
5. Autonomy	.93 (.79)	.12***	.44***	.15***	.19***	–

Note. The variables relationship, personal information, personal space, and autonomy are on a scale of 0 to 2. Standard deviations are given between brackets. The numbers labelling the columns refer to the variables presented in the rows.

Finally, we hypothesized that the differences in privacy conception between adolescents, young adults, and adults would also be reflected in their concern, that is, adolescents were expected to report less concern. A one-way ANOVA analysis showed a significant age effect indicating that adolescents', young adults' and adults' concern regarding their privacy differed from each other, $F(2, 999) = 21.94$, $p < .001$, $\eta^2 = .04$. A Post-hoc comparison of the three age groups showed that adolescents reported less concern ($M = 2.51$, $SD = 0.53$) than young adults ($M = 2.76$, $SD = 0.52$) and adults ($M = 2.74$, $SD = 0.59$). The latter two groups did

not differ from each other significantly. This supports the third hypothesis which states that adolescents are less concerned about their privacy compared to young adults and adults.

DISCUSSION

The goal of this chapter was to gain better insight into the privacy conceptions and concern regarding privacy of both young and old. The results presented replicated the general finding that the youth report less concern. We then showed that young and old also differ regarding the focus of their privacy conceptions and that these conceptions are related with the reported concern. In addition, the differences presented in privacy conceptions match the expectations from a developmental perspective. These results provide a different perspective from the commonly held view that today's young people no longer care about their privacy. Instead, the results here suggest that young people hold a different conception of privacy related to their developmental life stage and social needs: one that entails less cause for concern.

As was hypothesized, more adolescents associated privacy with situations involving relationships- such as being able to be alone with a friend or partner- but fewer adolescents associated privacy with situations involving personal information- such as data mining by governments. These findings indicate that differences in the privacy conceptions exist between younger and older individuals; younger individuals' privacy conceptions have a stronger focus on situations involving relationships. This aligns with the need of adolescents to pursue new friendships and to hang out with friends preferably out of reach of the known adults that still control large aspects of their lives (boyd & Marwick, 2011). For young people, the internet and social media may actually be found to provide privacy from parents and other known adults. This is more relevant for them than the more abstract risks of data mining and identity theft often associated with sharing information online and which are felt to be the main cause of concern for adults.

This perspective offers salient and fresh insights concerning the online behaviour displayed by young people. For example, whereas there is a trend in which an increasing number of adults are using SNSs (Hampton, Goulet, Rainie, & Purcell, 2011), the first reports have appeared which claim that youth are becoming tired of Facebook (Crook, 2013). The results presented suggest a possible relationship between these events. SNSs are important to the privacy of adolescents and young adults because they allow them to create a private space away from

their parents at home. As a result, if an increasing number of adults and parents are indeed making their way to SNSs such as Facebook, the popularity of these sites can be expected to drop among young people. The sites will no longer provide the privacy that young people seek.

Whereas prominent differences were found in the privacy conceptions of adolescents and adults, young adults' privacy conceptions shared both elements from adolescents' and adults' privacy conceptions. Young adulthood represents a heterogeneous age group due to many societal changes which take place during this phase (Arnett, 2000). Most importantly, they make the transition of the sheltered adolescent life, towards becoming self-sufficient and independent adults; they find employment, move out of their parental homes, and perhaps even marry. The results here support this transitory phase of young adulthood. Their privacy conceptions contained both the elements associated with adolescents and those associated with adults. We also found that young adults report similar concern regarding their privacy when compared to adults in keeping with several other studies who presented similar findings (Hoofnagle et al., 2010; Madden & Smith, 2010), further supporting the finding that the privacy aspect of personal information has the strongest relationship with concern regarding privacy.

Although not included in the hypotheses, the differences found between young and old regarding the situations involving personal space and autonomy further support a connection between the differences in conception with the developmental phase. The greatest differences concerning the association of situations with privacy were found to exist between adolescents and adults for voting ($\Delta 19.7\%$) representing autonomy and burglary ($\Delta 13.6\%$) representing personal space. Only the difference between adolescents and adults for data collection representing personal information was of a similar size ($\Delta 16.8\%$). Since most adolescents are neither home-owner nor allowed to vote, the differences for burglary and voting are easy to grasp. These situations have not yet become part of adolescent life and therefore they do not figure prominently in adolescents' reasoning. However, this also suggests that a similar argument could be made for the situation data collection. The threat of data collection by the government can be considered less prominent during adolescence since important potential intruders of privacy, such as employers, banks or governments do not yet play important roles in their lives. Instead, the youth need to constantly manage their privacy in relation to their parents in their parental homes and with regard to other known others in their relatively confined habitat of youngsters. This focus in privacy conception disappears from the age of 19 onwards. Adults spend less

time with friends (Hartup & Stevens, 1999; Blieszner & Roberto, 2004) and since they are homeowners and financially independent, adults can be expected to have entirely different concerns compared to adolescents (e.g., burglary).

The results show that the situations involving personal information, such as data collection by the government, had the strongest relationship with concern regarding privacy, whereas the situations involving relationships did not show a relationship with concern. This result provides further insight into the often reported privacy paradox. The paradox consists of young users disclosing great amounts of information on SNSs and simultaneously reporting to be concerned about their privacy (Acquisti & Gross, 2006; Fogel & Nehmad, 2009; van de Garde-Perik et al., 2008), albeit still less concerned than adults. This would only be inconsistent if youth would hold a privacy conception in which data mining by authorities and business corporations, or identity theft by criminals played a prominent role as they do for adults. The results here have shown this not to be the case.

LIMITATIONS

An important consideration drawn in this chapter is that individuals' privacy conception and in turn the concern they feel for their privacy are related to their developmental life phase. An implication of using a developmental perspective is that the reported privacy conceptions are a transient phenomenon for the individuals involved, meaning that, in the end, as they become older, those who were once young may change their ideas of what privacy is. This suggests that differences in privacy conceptions and concern as reported here, have always existed and that they will probably continue to exist. In other words, the internet and social media did not cause this difference in privacy conception nor did they necessarily cause the alleged drop in concern among youth. Instead, the internet and social media may have highlighted the already existing differences between young and old.

However, based on the data presented this remains speculation; it would require longitudinal data to verify these claims. The data presented show differences in the privacy conception of adolescents, young adults, and adults that appear related to developmental differences between young and old, but it cannot exclude possible alternative explanations, for instance, that the informational aspect of privacy has become less prominent for adolescents of today as a new generation. A longitudinal set up will allow an effective investigation of

whether privacy conceptions indeed develop as individuals grow older, or whether they are fixed personal characteristics and identify potential infliction points (e.g., when the individual leaves the parental home). Such a set up might also verify the causality between privacy conceptions and concern implied here. We have shown evidence of a relationship between conceptions and concern and the plausibility of a developmental perspective to understand the differences between young and old. However, additional research will be required to investigate this issue even further.

A second limitation of the current study is that only Dutch respondents who make use of an SNS were used. Although, a sizable portion of the Dutch population and the population in general, makes use of SNSs, it is possible that the results reported here cannot be generalized to the population that does not make use of SNSs. Furthermore, it would be interesting to see if similar results would be obtained in a non-Dutch sample.

Thirdly, this study is the first to measure the privacy conceptions of individuals based on the four aspects of privacy distinguished in privacy theories: *personal space*, *relationships*, *autonomy*, and *personal information* (Burgoon, 1982; Burgoon et al., 1989; Vedder, 2011). Although the scales that have been used have strong face validity, no further validation of the scales was done. Considering the significance of the results presented here, future studies are invited to improve and develop the privacy conception scales so as to measure the privacy conceptions of individuals more effectively.

CONCLUSION

Today, society is in a crucial stage of the debate on online privacy policies. Arguments drawing on the allegedly reduced appreciation of privacy by youth can have important implications for the development of future policies. The development of future technologies based on the assumption that privacy is appreciated less in society could lead to a self-fulfilling prophecy if these technologies leave even less room for individuals to create the privacy they desire. It is therefore important to have an exact understanding of individuals' appreciation for privacy and the relationship to their online behaviour, if not for the young people today, then for the young people of the future. In this study we do not provide conclusive evidence, but we do show that is plausible that a developmental perspective can be used to help understand the differences in privacy conceptions and concern between young and old. We hypothesize that once

today's young people will grow older, they will become more careful with regard to their online data, but at the same time we will be confronted with another generation of young people who will most likely again become notorious for their apparent reckless use of the then latest and trendiest information and communication technologies.

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CHAPTER 5

Why concern regarding privacy differs: the influence of age and (non-)participation on Facebook.

ABSTRACT

Both users of social network sites (e.g., Facebook) and younger people are often found to report less concern regarding their privacy. Through mediation analysis we explore two mechanisms that could explain these differences in concern. The results show that whereas the differences between users and non-users are mediated by a risk-benefit trade-off, the differences between young and old are mediated by their privacy conceptions. Users believe that relatively fewer risks and more benefits are likely to occur and therefore they report less concern. Young people, on the other hand, have a different privacy conception, which is related to less concern. These results suggest that the difference in felt concern regarding privacy between young and old is not necessarily related to the recent introduction of social media in society, but instead related to developmentally related differences in privacy conception.

Chapter adapted from;

Steijn, W.M.P., Schouten, A.P., & Vedder, A. (2014). Why concern regarding privacy differs: the influence of age and (non-)participation on Facebook. *Submitted for publication.*

INTRODUCTION

Both users of social network sites (SNSs) and young people are often reported as being less concerned with privacy than non-users or older people (Fox et al., 2000; “Online privacy worries increase with age”, 2009; Paine, Reips, Stieger, Joinson & Buchanan, 2007; Zukowski & Brown, 2007). In fact, the two categories, *young people* and *user of SNSs*, often coincide as young people are the most intensive users of SNSs. As a result, young people have obtained a reputation for caring less about their privacy *due* to their presence on social media (Nussbaum, 2007; Pafley & Gasser, 2008). An alternative explanation might be that young people have less concern regarding their privacy compared to older people simply because their ideas about what constitutes privacy—their privacy conceptions—differ. Therefore, they may be less concerned about privacy on SNSs simply because they have a different idea about what privacy entails.

This study will investigate whether the underlying mechanisms which cause the differences in felt concern regarding privacy between young and old, and users and non-users are similar or dissimilar through mediation analysis. While attention has been paid to the fact that young people do care about privacy despite making such rampant use of SNSs (Raynes-Goldie 2010; boyd & Hargittai 2010), very little time has been devoted to exploring why young people still often report less concern regarding their privacy compared to older people (Fox et al., 2000; “Online privacy worries increase with age”, 2009; Paine et al., 2007; Zukowski & Brown, 2007). Understanding exactly why younger people report less concern can serve as important information, for example, to legislators and policymakers, as well as to internet entrepreneurs. It is proposed that while users and non-users primarily differ in concern regarding their privacy because of a difference in the expected outcome from a risk-benefit trade-off, both young and old primarily differ due to subtle differences in their conception of privacy as a result of their differing developmental age and societal position. First, both mechanisms will be further introduced before stating the hypotheses.

SOCIAL NETWORK SITES AND PRIVACY: A RISK-BENEFIT TRADE-OFF

The use of SNSs has been linked to many personal and social benefits. SNSs provide possibilities to develop the identity and relationships (Ellison, Steinfield, & Lampe, 2007; Grimmelmann, 2009; Steijn & Schouten, 2013), and the use of SNSs has been linked to an increased sense of well-being, social support and happiness (e.g., Kim, & Lee, 2011; Lee, Noh, & Koo, 2013). These benefits are

inseparably linked to the intensity of the use (Taddicken & Jers, 2011); the more information you share, the more likely you are to obtain benefits such as friendships (Lampe, Ellison, & Steinfield, 2007). In other words, in order to obtain the benefits that SNSs can offer, individuals need to share information and in so doing they will hence make themselves vulnerable to the privacy risks as a consequence of sharing personal information on a (semi-) public forum. The privacy risks, consist among others, of becoming subjected to identity theft (Noda, 2009), profiling through data mining (Andrews, 2012), or certain individuals coming across information which was not intended for them to read, such as employers (Levy, 2009) or teachers (O'Dell, 2011).

Therefore, the decision to share information on an SNS is likely the result of a risk-benefit trade-off. This could either involve strategies that maximize the benefits while minimizing the risks (Maaß, 2011), or weighing competing expectations of the benefits and risks (Li, Sarathy, & Xu, 2010). Individuals who have higher expectations of benefits will be more likely to disclose information on their profile than individuals who consider the risks more likely to occur (Beldad, de Jong, & Steehouder, 2011). Non-users of SNSs would then most likely be individuals who consider the potential benefits to not outweigh the potential risks. Perceived vulnerabilities to online risks are related to concern regarding privacy (Youn, 2009; Youn & Hall, 2008). Thus, the risk-benefit trade-off could potentially distinguish users from non-users, and explain why users report less concern compared to non-users.

Several factors contribute to this risk-benefit trade-off which in turn explains the popularity of SNSs, despite the privacy risks involved and the difference in felt concern regarding privacy. First of all, people are generally bad at decision making in general and tend to underestimate the risks, resorting to biased cognitive strategies (e.g., the *safety in numbers* strategy is the belief that one's personal information is safely hidden among the personal information of everyone else's, see Grimmelmann, 2009). Moreover, while the benefits obtained through SNSs will be both tangible and immediate (e.g., a good feeling or social gratification through interaction with friends), most privacy risks remain more abstract and the consequences are often not directly noticeable to the user (e.g., identity theft) (Debatin, Lovejoy, Horn, & Hughes, 2009; Taddicken & Jers, 2011). The data collection and analysis that takes place with the information willingly (and unwillingly) shared goes unnoticed, until the user actually experiences a negative effect. An example of this was when Facebook introduced Beacon in 2007, an application that broadcast online purchases on the newsfeed. The sparks

of protest that followed this violation of privacy was in stark contrast to the common idea that users do not care about their privacy. It appears that users do care about their privacy, but that they appear to underestimate or ignore the risks until they actually experience the consequences (Steijn, 2014). Consequently, the users of SNSs report less concern regarding their privacy while pursuing their social gratification than might objectively be expected from them.

AGE AND PRIVACY: PRIVACY CONCEPTIONS

Most of the social benefits that can be obtained through SNSs and that were identified in the previous section are particularly relevant to young people. Developing an identity and relationship formation are important tasks during adolescence (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; boyd, 2008; Bukatko, 2008; Marwick, Diaz, & Palfrey, 2010; Mesch & Talmud, 2010; Peter & Valkenburg, 2011; Steijn, in press). It should therefore not be surprising that young people are the most intensive users of SNSs. Although older people are becoming increasingly active on the sites (Hampton, Goulet, Rainie, & Purcell, 2011), younger users generally still share more information and have more contacts than older users (Christofides, Muise, & Desmarais, 2012; Pfeil, Arjan, & Zaphiris, 2009). From this perspective, it is not surprising that the difference in concern regarding privacy between young and old is said to be related to youths' acceptance of social media in their everyday lives (Nussbaum, 2007; Pafley & Gasser, 2008).

This would suggest that a risk-benefit trade-off pattern could be found to underlie the differences in concern regarding privacy: similar to the one we expect to find for users and non-users described in the previous section. Young people would consider that the benefits outweigh the risks, because most of the benefits provided by SNSs are especially relevant to young people. For older people the perceived privacy risks outweigh the benefits, which subsequently accounts for their lower participation rate compared to young people. The differences observed in concern regarding privacy between young and old would then be regarded as a new phenomenon that has been caused by social media and which in turn could indicate that privacy has become less valued in society. We would like to propose an alternative explanation which instead suggests that at least some of the differences in concern regarding privacy have always existed between young and old and that they are not related to SNSs.

The alternative explanation we propose is a developmental perspective on the differences in concern regarding privacy between young and old. A develop-

mental perspective has been used previously to understand why SNSs are popular among young people (Christofides et al., 2012; Peter & Valkenburg, 2011; Subrahmanyam, Smahel, & Greenfield, 2006); they have become important social tools for young people (Ellison et al., 2007; Lampe et al., 2006; Peter & Valkenburg, 2011; Steijn, in press; Wolak, Mitchell, & Finkelhor, 2002). Similarly, a developmental perspective can help us to understand why young people appear to be unconcerned with their privacy compared to older people. For this purpose, we will investigate individuals' privacy conceptions. A person's privacy conception, that is, that person's specific idea of what it is that privacy refers too, will affect his or her felt concern regarding privacy.

Our privacy conceptions cover a wide range of privacy related situations and values. Privacy theories have connected privacy with (1) *autonomy*, the freedom to make decisions or to vote freely without the influence of authorities; (2) *relationships*, being able to be alone with a friend or partner; (3) *personal space*, trespassing of strangers in private spaces; and (4) *personal information*, the accessibility and control of personal information (Burgoon; 1982; Vedder, 2011). The focus of privacy theories has changed over the course of time and it generally reflects those changes that take place in society and which values have become more important (Vedder, 2011). In view of the current developments taking place on the internet, and the popularity of SNSs, the privacy debate has focused primarily on personal information. However, not all individuals will necessarily hold a privacy conception that focusses solely on personal information. In fact, we argue that this may present an essential difference in the privacy conceptions that young people and old people hold.

Steijn and Vedder (submitted) investigated the privacy conception of adolescents (12- to 19-year-olds), young adults (20- to 30-year olds), and adults (31-years-old and older). They asked respondents which situations, related to autonomy, relationships, personal space, or personal information, they associated with privacy in order to determine the privacy conceptions. Two important differences were reported in that study. Relatively more adolescents associated privacy with situations involving relationships, for example being able to be alone with a partner or friend, whereas relatively more adults associated privacy with those situations that involve personal information, for example, the government collecting data.

These differences were explained by pointing out that early in life individuals have different concerns when compared to individuals in latter developmental life phases (Steijn & Vedder, submitted). For adolescents, being able to hang out with friends and to develop relationships is an important developmental goal

(Peter & Valkenburg, 2011). Their main concern is to be able to do so away from the scrutiny of parental supervision (boyd & Marwick, 2011). As individuals grow older and leave the parental house to become home owners and earn a living, their societal position changes. Threats of data mining and profiling by bankers, authorities, and future employers become more prominent in later age. These parties arguably play a smaller role in the lives of young people who instead are pre-occupied with their relational privacy in the parental homes.

Here, we will investigate if privacy conceptions indeed mediate the relationship between age and felt concern regarding their privacy. Steijn and Vedder (submitted) found no relationship between a focus of privacy conception on situations involving relationships and felt concern regarding privacy. They did, however, find a relationship between a focus of privacy conception on situations involving personal information and felt concern. We shall therefore only focus on differences in privacy conceptions in terms of situations involving *personal information* in this study. Furthermore, we will make a distinction between respondents according to the following age categories: adolescents (12- to 19-year-olds), young adults (20- to 30-year olds), and adults (31-years-old and older).

CURRENT STUDY

The goal of this study is to compare the underlying mechanisms that cause the differences in concern regarding privacy between young and old and users and non-users of SNSs. We claim that the differences in concern between young and old are primarily explained by the differences in privacy conceptions, while the differences in concern between users and non-users are primarily explained by differences in risk-benefit perceptions. Here, we will address this issue by means of a mediation analysis. Our hypotheses have subsequently been formulated in accordance with the steps taken in mediation analyses.

The first step in mediation analysis is to establish the direct effect of the independent variables on the dependent variable. In this case we expect that both the age of the individual, and whether the individual uses SNSs, will have a direct relationship with concern regarding privacy. Previous studies have shown that younger people report less concern regarding privacy compared to older people (Fox et al., 2000; "Online privacy worries increase with age", 2009; Paine et al., 2007; Zukowski & Brown, 2007) and users of social network sites report less concern compared to non-users (Acquisti & Gross, 2006). The first two hypotheses therefore state:

H1: Adolescents will report less concern regarding their privacy than young adults and adults.

H2: Users of social network sites will report less concern regarding their privacy compared to non-users.

The second step in the mediation analysis is to establish the relationship between the mediating variables and the dependent variable. In the previous sections, we introduced two factors that could mediate the relationship with concern regarding privacy. The first factor concerned a risk-benefit trade-off. We argued that individuals who consider the risks more likely to occur as a result of sharing information on an SNSs will also report more concern (Youn, 2009; Youn & Hall, 2008), whereas individuals who consider the benefits more likely to occur will report less concern.

H3: Individuals, who consider the risks more likely and the benefits less likely to occur as a result of sharing information on SNSs, will report less concern regarding their privacy.

The second factor was concerned with the privacy conceptions of individuals. Those individuals who have a privacy conception which focusses more on situations involving personal information, i.e., data mining, are expected to report more concern regarding their privacy compared to individuals whose privacy conception focuses less on this (Steijn & Vedder, submitted).

H4: Individuals whose privacy conception associates situations involving personal information with privacy will report more concern regarding their privacy, compared to those individuals who do not associate these situations with privacy.

The third and final step in mediation analysis is to establish to what degree the main effects between the independent and dependent variables are mediated by including the mediation variables. The effect of use or non-use of SNSs on concern regarding privacy is expected to be mediated by the risk-benefit analysis individuals make (Beldad et al., 2011). In other words, the users of SNSs are likely to be individuals who consider the benefits more likely, but the risks less likely to occur as a result of sharing information on SNSs, who in turn are expected to report less concern (Youn, 2009; Youn & Hall, 2008).

H5: The relationship between use or non-use of SNSs and concern regarding privacy is mediated by the balance between the expected likelihood of risks and benefits as a result of sharing information on SNSs.

The effect of age, on the other hand, is expected to be mediated through the privacy conceptions individuals hold. Young people's privacy conceptions differ from older people's privacy conceptions based on their developmental life phase (Steijn & Vedder, submitted). Adults and young adults are expected to have a privacy conception that focusses relatively more on the protection of their personal information compared to adolescents. This may explain, in turn, why they report more concern regarding their privacy compared to younger people, as the internet primarily poses privacy risks for our personal information and data (Steijn & Vedder, submitted).

H6: The relationship between age and concern regarding privacy is mediated by the difference in privacy conceptions.

METHOD

SAMPLE AND PROCEDURE

The data presented in this chapter were obtained by means of an online questionnaire from July 19 until August 4, 2011. The survey was conducted by the research institute TNS-NIPO, who recruited the sample from their representative sample pool from among the Dutch population. Respondents were recruited through a stratified sampling procedure based on age, and the fact whether or not they made use of a social network site. Respondents gave their consent to participate in the research survey (parents provided consent for individuals younger than 18 years of age) and upon completion of the questionnaire they received special points, which they could trade for discount coupons. All of the respondents received the questionnaire which included a few minor modifications regarding the language and politeness rules for addressing children and adults in Dutch.

Table 1. — *Sample's distribution (1a), mean age (1b), and gender (1c)*

1a. — Distribution				
	Adolescents	Young Adults	Adults	Total
Non-use	219	174	319	712
Use	372	277	353	1,002
Total	591	451	672	1,714
1b. — Age				
	Adolescents	Young Adults	Adults	Total
Non-use	14.57 (2.16)	25.83 (3.25)	50.58 (13.66)	33.46 (18.52)
Use	14.60 (2.16)	25.55 (3.10)	46.22 (12.12)	28.77 (15.52)
Total	14.59 (2.16)	25.66 (3.16)	48.29 (13.05)	30.71 (16.99)
1c. — Gender				
	Adolescents	Young Adults	Adults	Total
Non-use	63.0%	47.7%	44.2%	50.8%
Use	47.0%	28.9%	41.1%	39.9%
Total	53.0%	36.1%	42.6%	44.5%

Note. Age provides means with standard deviation in brackets. For gender, the percentage males are provided.

In total, 3,170 respondents were approached for the survey from which 1,720 respondents completed the questionnaire. Altogether, 1,008 respondents made use of an SNS and 712 did not. Six respondents were removed from the sample as they explicitly stated having created their profile merely for a different purpose (e.g., as requirement for using another site). Of the remaining 1,002 respondents, 125 (12.5%) have a profile only on Facebook, 365 (36.4%) have a profile only on Hyves, and 512 (51.1%) have a profile on both sites. Furthermore, 591 adolescents, 451 young adults, and 672 adults completed the questionnaire. Table 1 provides the details of the respondents' age, gender and distribution across the six categories.

MEASURES

*Concern regarding privacy*¹. In order to assess how concerned individuals are with their privacy, they were asked whether they were concerned about their privacy, think their privacy is important, feel they have too little privacy, and consider the internet as a threat to their privacy. Ratings were made on a 4-point Likert scale from completely disagree (1) to completely agree (4). A reliability

¹ This scale is also used in Chapter 4 (p.81) and from the same dataset.

analysis provided an acceptable score ($\alpha = 0.721$) for the 4 items to be combined into a single *privacy concern* scale. For this scale, higher scores indicate more concern regarding privacy in the form of feeling more concerned about privacy, privacy to be more important, having too little privacy, and believing the internet to be more of a threat to their privacy.

*Privacy conception*². Respondents' privacy conceptions were assessed with the assistance of eight privacy-related situations. Respondents were asked which of the situations they associated with privacy by asking simple yes-no questions. The situations were based on the four factors of privacy identified by Vedder (2011): relationships, personal information, personal space, and autonomy. In this study, we focus on the situations involving personal information previously shown to have the strongest relationship with felt concern regarding privacy (Steijn & Vedder, submitted). These situations concerned *data collection* (the government collecting information about the respondent) and *information sharing* (putting information on the Internet). The scores for these items were added together to create a single *privacy conception (personal information)* scale with a range of 0 to 2 (situations associated with privacy). The situations involving relationships were omitted, because we had previously shown that these situations have no relationship with concern regarding privacy (Steijn & Vedder, submitted). This decision was made based on the fact that the main goal in this study was to explain the differences in concern.

Risk and benefit perception. Respondents were presented with a list of 16 potential outcomes from sharing information on SNSs. Respondents were asked to indicate for each situation how likely they considered the outcome to be. The outcomes could be differentiated into 9 potential risks and 7 potential benefits. The risks were as follows: a fight in the family, losing money, being bullied, reputation being defamed, having undesirable contact with a stranger, getting into contact with someone you are trying to avoid, getting into a fight with a friend, identity being stolen, and a boss or teacher discovering embarrassing information about the respondent. The benefits were: getting a job, a boss or teacher discovering positive information about the respondent, becoming more popular, staying in touch with friends who had moved, working out an argument, feeling happy, and renewing contact with a lost friend. Responses were on a 4-point-Likert scale ranging from 1 (very likely) to 4 (very unlikely). Responses were reduced to a simple dichotomous scale of *likely* or *unlikely* to be able to make a single scale concerning how many risks or benefits the respondent considered likely.

² This scale is also used in Chapter 4 (p.83) and from the same dataset.

A single *risk perception* scale was created by adding up the total number of risks respondents reported that they considered likely to occur ranging from 0 to 9 ($M = 2.62$, $SD = 2.90$) and a single *benefit perception* scale was created by adding up the total number of benefits that respondents reported likely to occur ranging from 0 to 7 ($M = 2.22$, $SD = 1.96$). Finally to assess the risk benefit trade-off, we created a *risk-benefit balance* scale ranging from -9 to 7 ($M = -.40$, $SD = 2.28$) by subtracting the risk perception scale from the *benefit perception* scale. Higher scores indicate that respondents consider relatively more benefits likely to occur compared to risks.

RESULTS

Before starting the analysis, we explored the data. Table 2 provides the mean, standard deviation, range and the correlations between the used variables. In addition, multivariate analysis was performed to investigate *age*, *use* and interaction effects on *privacy concern*, *privacy conception*, *risk perception*, *benefit perception*, and *risk-benefit balance*. Multivariate tests showed a small age effect, $F(8, 3412) = 13.76$, $p < .001$, $\eta^2 = .03$, a large use effect, $F(4, 1705)$, $p < .001$, $\eta^2 = .18$, and a very small interaction effect $F(8, 3412) = 2.28$, $p = .020$, $\eta^2 = .01$. Next we inspected the between subject effects, results are also presented in Table 3.

A significant age effect was found for *privacy concern*, $F(2, 1708) = 30.68$, $p < .001$, $\eta^2 = .02$, *privacy conception*, $F(2, 1708) = 18.61$, $p < .001$, $\eta^2 = .02$, *risk perception*, $F(2, 1708) = 3.54$, $p = .029$, $\eta^2 = .00$, and *benefit perception*, $F(2, 1708) = 7.07$, $p = .001$, $\eta^2 = .01$. Post-hoc analysis showed that adolescents reported less concern regarding their privacy and associated fewer situations involving personal information with privacy when compared to young adults and adults. Furthermore, young adults reported more benefits to be likely to occur as a consequence of sharing information on SNSs compared to adolescents and adults. Post-hoc analysis indicated no differences for risk perception (see Table 3c). A significant *use* effect was found for *privacy concern*, $F(1, 1708) = 36.83$, $p < .001$, $\eta^2 = .02$, *risk perception*, $F(1, 1708) = 103.54$, $p < .001$, $\eta^2 = .06$, *benefit perception*, $F(1, 1708) = 27.18$, $p < .001$, $\eta^2 = .02$, and *risk-benefit analysis*, $F(1, 1708) = 345.61$, $p < .001$, $\eta^2 = .17$. Post-hoc analysis showed that non-users reported more concern regarding their privacy compared to users and non-users considered more risks but fewer benefits likely to occur as a result of sharing information on SNSs. In addition, non-users scored significantly lower on the *risk-benefit balance* scale (see Table 3e). These findings are in support of our first two hypotheses.

Table 2. — Means, Standard Deviations, Range, and Correlations.

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	1	2	3	4	5	6	7
1. Privacy concern	2.74	.57	1	4	×						
2. Age	30.71	16.99	12	83	.13***	×					
3. Use	–	–	0 (n.u.)	1 (use)	-.16***	-.14***	×				
4. Privacy Conception	1.32	.74	0	2	.19***	.08**	-.01	×			
5. Risk perception	2.62	2.90	0	9	.21***	-.06*	-.24***	.13***	×		
6. Benefit perception	2.22	1.96	0	7	.02	-.13***	.12***	.11***	.62***	×	
7. Risk Benefit balance	-.40	2.28	-9	7	-.25***	-.03	.41**	-.07**	-.74***	.07**	×

Note. Correlations significant at * $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$.

N.u. = non-use.

Finally, a significant interaction (*age* × *use*) effect was found for *risk perception*, $F(2, 1708) = 3.74$, $p = .024$, $\eta^2 = .00$, and *benefit perception*, $F(2, 1708) = 6.78$, $p = .001$, $\eta^2 = .01$. Looking at Table 3, we can observe that it is namely young adults who make use of SNSs, who consider both more benefits and risks likely to occur as a result of sharing information on SNSs compared to adolescents and adults who make use of SNSs, whereas adolescent non-users consider more benefits and risks likely to occur compared to young adults and adults who do not make use of SNSs.

Next, we performed mediation analysis guided by our hypotheses. Mediation analysis was done to investigate to what degree the relationships between *age* and *privacy concern*, and *use* and *privacy concern* are mediated by privacy conceptions or perception of risks or benefits. Mediation analysis was done by using Hayes and Preacher's method (2012). This method allows for the analysis of a mediation model with multiple mediator variables and allows the inclusion of control variables. In this way we could control for *use* or *age* while testing the other. Here, *use* and *age* were entered as independent variables, *privacy conception (personal information)* and *risk-benefit balance*, as mediation variables, and *privacy concern* as dependent variable.

First of all, we examined the direct effects of both *age* and *use* on *privacy concern*. Young people reported less concern compared to older people, $b = .004$, $t(1711) = 4.624$ (H1), and users reported less concern compared to non-users, $b = -.167$, $t(1711) = -6.004$, $p < .001$ (H2), providing further support for our first two hypotheses. Adding the mediators to the model resulted in partial mediation for the direct effect of both *age* and *use* on *privacy concern*. Figure 1 gives an overview of the resulting model. The model explains approximately 10 percent of

total variance ($R^2 = .105$). Including the mediators reduced the direct effect of *age* slightly, $b = .004$, $t(1709) = 4.416$, $p < .001$, and reduced the direct effect of *use*, $b = -.068$, $t(1709) = -2.287$, $p = .022$, indicating partial mediation for both *age* and *use*. Below, we will further inspect the model to explore these mediation effects.

The results support the third and fourth hypotheses concerning the relationship between the mediating variables and *privacy concern*. *Risk-benefit balance* was found to have a negative relationship with *privacy concern* (H3). In other words, individuals who perceived more benefits relative to the risks to be likely to occur, also reported less concern, $b = -.053$, $t(1709) = -8.281$, $p < .001$. Privacy conception was found to have a positive relationship with *privacy concern* (H4). In other words, individuals whose privacy conception appears to associate more situations involving personal information with privacy also reported more concern, $b = .126$, $t(1709) = 7.073$, $p < .001$.

To investigate the final two hypotheses, we looked at which variables mediated the relationship for *use* and *privacy concern*, and *age* and *privacy concern*. The relationship between *use* and *privacy concern* is partially mediated through *risk-benefit balance*. Users consider relatively more benefits than risks likely to occur as a result of sharing information on SNSs, $b = 1.914$, $t(1711) = 18.627$, $p < .001$. Individuals, who do so, are likely to report less concern regarding their privacy. The bias-corrected percentile bootstrap confidence interval confirms that the indirect effect through *risk-benefit balance*, 95% CI $[-.127, -.077]$, is different from zero. *Privacy conception* did not mediate the relationship between *use* and *privacy concern*.

Table 3. — Overview of *Privacy Concern* (3a), *Privacy Conception* (3b), —

3a. — Privacy concern				
	Adolescents	Young Adults	Adults	Total
Non-use	2.69 (.56)	2.91 (.53)	2.91 (.58)	2.84 (.57) ^a
Use	2.51 (.53)	2.76 (.52)	2.74 (.59)	2.66 (.56) ^b
Total	2.58 (.55) ^a	2.82 (.53) ^b	2.82 (.60) ^b	2.74 (.57)
3b. — Privacy conception information				
	Adolescents	Young Adults	Adults	Total
Non-use	1.16 (.77)	1.34 (.73)	1.43 (.71)	1.33 (.74)
Use	1.17 (.77)	1.40 (.73)	1.40 (.70)	1.32 (.74)
Total	1.17 (.77) ^a	1.38 (.73) ^b	1.42 (.71) ^b	1.32 (.74)

Table 3. — <Continued> Risk Perception (3c), Benefit Perception (3d), and Risk-Benefit Balance (3e) Scores.

3c. —Risk perception				
	Adolescents	Young Adults	Adults	Total
Non-use	3.85 (2.79)	3.48 (2.78)	3.15 (2.68)	3.44 (2.75) ^a
Use	1.89 (2.74)	2.40 (2.88)	1.91 (2.92)	2.04 (2.85) ^b
Total	2.62 (2.92)	2.82 (2.89)	2.50 (2.88)	2.62 (2.90)
3d. —Benefit perception				
	Adolescents	Young Adults	Adults	Total
Non-use	2.17 (1.89)	1.93 (1.64)	1.77 (1.61)	1.93 (1.71) ^a
Use	2.26 (2.11)	2.93 (1.99)	2.20 (2.11)	2.42 (2.10) ^b
Total	2.22 (2.03) ^a	2.55 (1.93) ^b	2.00 (1.90) ^a	2.22 (1.96)
3e. —Risk-benefit balance				
	Adolescents	Young Adults	Adults	Total
Non-use	-1.68 (2.41)	-1.55 (2.31)	-1.38 (2.30)	-1.51 (2.34) ^a
Use	.37 (1.87)	.53 (2.01)	.29 (1.75)	.38 (1.87) ^b
Total	-.39 (2.31)	-.27 (2.36)	-.50 (2.20)	-.40 (2.28)

Note. Mean averages are given with standard deviations in parentheses. Letters in superscript indicate statistical differences between different superscripts.

These results are in accordance with the hypothesis of the risk-benefit trade-off (h5). In Table 3 we can see that non-users considered more risks ($M = 3.44$, $SD = 2.75$) than benefits ($M = 1.93$, $SD = 1.71$) likely to occur, while users considered more benefits ($M = 2.42$, $SD = 2.10$) than risks ($M = 2.04$, $SD = 2.85$) likely to occur. As a result the balance is negative for non-users ($M = -1.51$, $SD = 2.34$), but positive for users ($M = .38$, $SD = 1.87$).

The relationship between age and privacy concern is partially mediated through a difference in *privacy conceptions* in accordance with our last hypothesis. Older individuals associated more situations involving personal information with privacy, $b = .004$, $t(1711) = 3.298$, $p = .001$. In turn, individuals who have a privacy conception which is focussed more on situations involving personal information reported higher concern. The bias-corrected percentile bootstrap confidence interval confirms the indirect effect through *privacy conception*, 95% CI [.000, .001], is different from zero. *Risk-benefit balance* did not mediate the relationship between *age* and *privacy concern*.

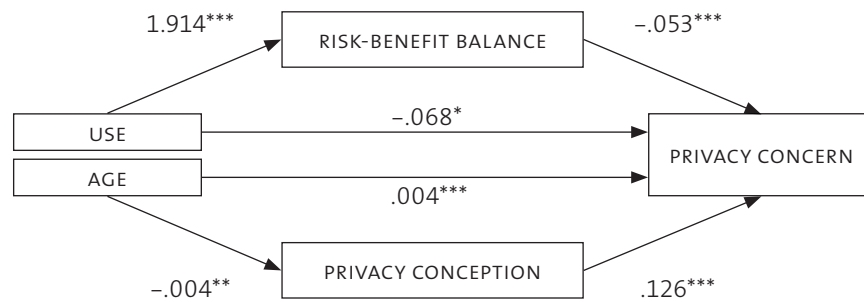


Figure 1. — Risk-benefit balance and privacy conception as mediators of the relationship between the use of SNSs or not and individuals' age, and individuals' concern regarding privacy. Non-significant mediators are not reported. Unstandardized regression values are reported.

* $p < .05$, ** $p < .01$, *** $p < .001$.

DISCUSSION

This chapter set out to investigate whether the underlying mechanisms causing the differences in felt concern regarding privacy between young and old, and users and non-users are similar or dissimilar. The results supported the hypotheses that users and non-users differ in concern because of the difference in expected risk-benefit balance of sharing information on SNSs, and young and old differ in concern due to differences in the focus of their privacy conceptions.

A likely explanation for the popularity of SNSs could be that many people consider the benefits for participating and sharing information on such sites to outweigh the risks. The results presented here support this idea as users were found to consider more benefits likely, but fewer risks likely to occur compared to non-users. As a result, users generally have a positive risk-benefit balance concerning the sharing of personal information on SNSs, whereas non-users on average have a negative risk-benefit balance. We showed that the perception of likelihood of both risks and benefits directly influences the reported concern regarding privacy in agreement with previous studies (Youn, 2009). We found that this difference in risk-benefit balance partly mediates the relationship between use or non-use of SNSs and concern. The lower concern regarding privacy reported by SNS users is can be partially explained by the more positive outlook on the likelihood of both benefits and risks as the result of sharing information on SNSs.

The differences in concern regarding privacy between young and old were instead partially mediated by differences in privacy conception instead. We showed that older individuals were more likely to associate situations related to personal information. In turn these individuals reported more concern regarding their privacy. Users and non-users did not differ in their privacy conceptions, suggesting that the use (or non-use) of SNSs does not affect an individual's privacy conception. Subsequently, the difference in privacy conceptions and the related differences in concern regarding their privacy are not necessarily related to the popularity of social media among young people.

These results support taking a developmental perspective in order to understand the differences in concern regarding privacy between younger and older individuals. When individuals grow older, their societal position and social needs change. The internet primarily poses a privacy risk in relation to personal information in the form of data mining, bankers, future employers, and authorities. However, only once individuals leave the parental home and start working, do bankers, future employers, and authorities start to play prominent roles in their lives. For younger people still living in their parental homes these risks are still more abstract. Instead, they are still managing their privacy from their parents at home (boyd & Marwick, 2010). Here we have shown that the privacy conceptions indeed differ between younger and older individuals in keeping with expectations from this developmental perspective. Adolescents' privacy conception is less focused on the protection of their personal information compared to adults. As a result, this developmental perspective offers a possible explanation for the differences in felt concern regarding privacy between young and old that is unrelated to social media. The findings presented here provide support for this developmental perspective, however longitudinal data will be required to verify these assumptions.

Several considerations should be taken into account when interpreting these findings. First, this chapter focussed only on the SNSs Facebook and Hyves. Future studies might want to explore whether the results are generalizable and can be applied to overall internet use or other social media, more specifically. Facebook has already received substantial public (mostly negative) attention in relation to privacy, and it would be interesting to learn whether the reported risk-benefit analysis would differ in relation to other social media that has received less public attention in relation to privacy. Second, the model presented accounted for 10% of the total variance in concern regarding privacy, thus other variables exist as well which mediate the relationship between use of SNSs and age with

felt concern regarding privacy. For example, young people are generally considered to be more proficient with new technologies (Palfrey & Gasser, 2008). Having a better knowledge of online data processes or privacy settings could also mediate the relationship between age and concern regarding privacy as well. Similarly, users are likely to have better knowledge of online data processes than non-users.

The results presented here provide support in that the differences observed in privacy conception between young and old are not necessarily related to their use of social media. Users and non-users of SNSs also differ in concern regarding their privacy, but did not have different privacy conceptions when we controlled for age. Often, no distinction is made between the fact that an individual is young and the fact that an individual is a user of SNSs when discussing their privacy attitudes. The results here show that we should: users of SNSs differ from non-users in reported concern regarding their privacy for other reasons than young people from older people. As a consequence, these results suggest that the differences in concern regarding privacy between young and old may always have existed and become more apparent now social interactions take place online.

This is not to say that the introduction of social media will not have an effect on society as a whole in the long run. If the current practices of data collection are not restrained, young people may become accustomed to the idea that so much data are gathered about them and, in turn, privacy might indeed start to hold less value. Young people's use of SNSs generally appears to be due to the social benefits that are presented to them (Ellison et al., 2007; Lampe et al., 2006; Peter & Valkenburg, 2011; Steijn, in press; Wolak et al., 2002). At the same time, however, young people are vulnerable from a privacy perspective which, as we have shown here, may not yet be prominent during this particular phase of their lives. As such, we should continue to look for effective ways to regulate online privacy.

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Why concern regarding privacy differs.

CHAPTER 6

The cost of using Facebook: assigning value to privacy protection on social network sites against data mining, identity theft, and social conflict.

ABSTRACT

By using SNSs, users expose themselves to several potential privacy threats. Yet little is known about how SNS users of various ages prioritize their concerns over these different privacy threats. This study employs an innovative method to determine the relative importance SNS users attribute to protection against the various potential privacy threats they face. We distinguish between three sources of potential privacy threats: data mining, identity theft, and social conflict. The results show that even respondents as young as 12-year-olds attribute most importance to privacy protection against data mining. Furthermore, the results suggests that respondents generally only seek privacy protection that is good enough, avoiding the most obvious privacy violations, as opposed to trying to obtain the best privacy protection. These findings indicate that the development of policies to regulate and safeguard SNS users' privacy online is of prime importance.

Chapter adapted from;

Steijn, W.M.P. (2014). The cost of using Facebook: Assigning value to privacy protection on social network sites against data mining, identity theft, and social conflict. In S. Gutwirth, R. Leenes, & P. de Hert (eds.), *Reloading data protection: Multidisciplinary insights and contemporary challenges* (pp. 323-341). Dordrecht: Springer.

INTRODUCTION

Social network sites (SNSs) which focus on social relationships and interactions, such as Facebook or Hyves, have rapidly become popular among millions of users worldwide. Their popularity has continued to increase, despite the different privacy risks users are exposed to. Not only is the shared information on SNSs subject to data mining which could result in privacy violations (Andrews, 2012), but the information shared also exposes the user to potential identity theft (Noda, 2009; Timmer, 2009), and users have to manage different social contexts (e.g. friends, family, and colleagues) to avoid social conflict as a result of the information they share (Binder, Howes, & Sutcliffe, 2009; Skeels & Grudin, 2009). The use of SNSs is therefore often seen as evidence that users no longer care about privacy (Johnson, 2010) and that users could claim their privacy to be important is considered paradoxical.

The paradox quickly unravels though, if one takes the social merits SNSs provide for its users into account. SNSs provide social merits in the forms of new possibilities for self-presentation and social interactions with friends (Ellison, Steinfield, Lampe, 2007; Steinfield, Ellison, Lampe, 2008). These social merits depend on where an individual's social network is (e.g., where his or her friends are) online, leaving users with little choice as to which SNS they select. As a result, participation on SNSs does not necessarily predict actual (or a lack of) privacy concerns.

This study will not only provide new insights into SNS users' privacy concerns by describing the relative importance they attribute to different privacy threats, but will also contribute to the ongoing privacy discussion by addressing the privacy paradox and by emphasizing the need for further development of new privacy policies and regulation. An innovative method will be used to determine the relative importance attributed by SNS users to the potential privacy threats through data mining, identity theft, and social conflict. Furthermore, the degree to which younger and older individuals differ in how they attribute importance to the various threats will be investigated. To this date no research exists, to our knowledge, which has explicitly compared which privacy threats users find most important. First we include additional background information on the proposed methodology, before formulating the research hypotheses based on related work.

BACKGROUND

A choice based conjoint (CBC) design was chosen to investigate the relative importance SNS users attribute to different privacy threats¹. CBC is a popular research design used in marketing to determine how a new product best fits consumers' wishes (Curry, 1996; Orme, 1996). The strength of a CBC design is that it can determine the relative value respondents attribute to the features of a product avoiding direct questioning, but instead relying on respondents' actual decisions. In addition, as respondents are presented with a complete product as opposed to, for example, pairwise comparison where respondents' decisions are based on only two features at a time, the decision making process can be considered more realistic.

While potential privacy threats SNS users encounter cannot be directly included as features, it is easy to imagine how respondents could be presented with choice tasks between SNSs which vary on privacy protection features affecting these different potential privacy threats. This assumes that the importance users attribute to a certain privacy protection feature will be indicative of where their main privacy concerns lie.

This assumption can be justified with Petronio's Communication Privacy Management (CPM) theory (2002). CPM theory addresses the dialectical relationship between the need for privacy and the desire to share personal information with others. It describes how we create metaphorical boundaries to be able to share information with some, while excluding others from this information. These boundaries are signalled and maintained through an implicit rule-based system. For example, we whisper certain information not only to literally avoid being overheard, but also to signal to the other that what we are saying is private and that we do not wish for it to be shared with others. In effect, a boundary is formed surrounding that information including only the other to whom the information is whispered and who then becomes a co-owner of that information (Petronio, 2002).

Although CPM focuses on face-to-face context, the dialectical need has become especially apparent on contemporary SNSs. They have become an important medium and offer social merits to their users in the form of new possibilities for self-presentation and social interactions with friends (Ellison et al., 2007; Steinfield et al., 2008), resulting in large amounts of information being shared on these sites. Instead of being limited to metaphorical boundaries, SNSs provide the technological tools to enforce the boundaries concerning personal information (Litt, 2012). For example, by changing the settings of their posts to *friends only* on Facebook, users restrict access to their contacts only, and exclude anyone else

¹ For more information see: http://www.sawtoothsoftware.com/products/cbc/cbc_method

who might be attempting to see what they posted on their profile. Maintaining these boundaries online has become increasingly important and necessary because the permanence and searchability of online information (boyd, 2008a, p.27) would otherwise make online shared information accessible to anyone at any time.

The current study specifically focuses on the relative importance SNS users attribute to boundaries against the following three potential privacy threats: those as a consequence of data mining, identity theft, and social conflict. While users are exposed to all three privacy threats at the same time on SNSs, each threat has a different origin and other factors influence users' protection against each threat. Next, these three types of privacy threats will be briefly described in relation to SNSs and examples will be given of which privacy protection features SNSs could provide that affect each specific privacy threat.

Data Mining. This category concerns the potential privacy threat imposed by data mining and profiling by the SNS provider and third parties. Since the SNS' business model is generally based on the use of the available personal information for commercial purposes, personal data placed on these sites often becomes available to external parties. The scale on which data mining occurs is reflected in the economic value of Facebook as a company (Pékarek & Leenes, 2009). SNSs can contain several features which affect the privacy protection of the user against data mining. First, it makes a difference whether the site owns the information posted on the site and whether information can be removed by users or whether it remains in the database. Second, SNSs generally also have a policy concerning the access of third parties to personal information disclosed by the user.

Identity theft. This category concerns the potential privacy threats imposed by strangers with criminal intent, of which identity theft is the most familiar. Several features of SNSs can provide privacy protection against identity theft by strangers. One is the privacy settings, which only allow the users' contacts to access their full profile. However, this only provides partial protection as users are inclined to accept friend requests from strangers (Noda, 2009). Another way to create boundaries against identity theft is by refraining from posting personally identifiable information online, since even posting seemingly innocent information such as the date of birth can have risks (Timmer, 2009). Consequently, if SNSs require users to fill in identifying data (such as a name) or contact data (such as an email address) to verify their profile, the privacy threat of identity theft is increased.

Social conflict. This category concerns the potential privacy threat of social conflict. This is mainly a consequence of the mixed social contexts on SNSs: socializing with friends now occurs within reach of family and (future) employers.

Information shared with one group is not necessarily appropriate or desirable for disclosure to others, and could lead to tension or conflict (Binder et al., 2009; Skeels & Grudin, 2009; Lampinen, Tamminen, Oulasvirta, 2009). Several features of SNSs can affect the privacy protection of users against social conflict. First of all, being able to sort contacts into different groups and to discriminate in what information is available to which groups can help create boundaries between social contexts. Second, the possibility to tag pictures on SNSs can negatively affect the boundary someone tries to protect. An example of this would be a tagged picture (drunk at a party) posted by a friend also becoming visible to family. Third, SNSs could enable users to track visitors to their profile which could expose frequent visitors. Facebook, however, does not support this option (Mongold, 2010).

This study compares the relative importance attributed to privacy protection features against data mining, identity theft, or social conflict by SNS users of all ages. The current section has introduced the proposed methodology and grounded it in the theory and operationalized the privacy threats of interest. Next, related work will be discussed in order to introduce the research hypotheses.

RELATED WORK

Privacy has been a subject of research for many years, but in recent years the focus has primarily been on privacy and the internet. Both the media (Andrews, 2012; Noda, 2009; Timmer, 2009) and academia have paid substantial attention to the potential privacy threats of data mining and identity theft on SNSs. (Acquisti & Gross, 2006; Debatin, Lovejoy, Horn, & Hughes, 2009; Govani & Pashley, 2005; Gross & Acquisti, 2005). The studies generally conclude that their student samples of Facebook users appear not to care about the potential privacy threats on such sites. These conclusions are mainly driven by the amount of information shared by the students, despite the risks.

However, participation on SNSs does not necessarily mean that users do not have any concerns regarding their privacy. The popularity of social network sites is a result of the possibilities they create for social interaction with friends (Ellison et al., 2007; Steinfield et al., 2008). Non-participation may even simply not be considered due to the related social costs in missing out on the social interactions among friends occurring on these sites (Raynes-Goldie, 2010). As a result, even privacy-concerned and aware individuals may join an SNS.

Indeed, SNSs users have proven to be creative concerning their privacy protection against social conflict, coming up with many alternative strategies such as using multiple profiles (boyd & Marwick, 2011, p. 14; Lampinen et al., 2009; Stutzman & Hartzog, 2009), but when it comes to their boundaries against data mining and identity theft, they primarily have to rely on what the sites provide. This does not automatically suggest that they are not concerned about these potential privacy threats; there is simply little they can do if they want to socialize on these sites. Findings noted by Paine, Reips, Stieger, Joinson and Buchanan (2007) support this notion. When asked, their 20-year-old and older respondents reported spam, spyware, hackers, access to personal information, and identity theft as their major privacy concerns in relation to the internet.

Respondents are expected to be aware of the potential privacy threats of data mining and identity theft. The fact that they are participating on SNSs does not diminish their concern about data mining and identity theft, however in real life they often have no possibility to manipulate their protection against these privacy threats. When given the option, they can be expected to prioritize protection against data mining and identity theft above protection against social conflict, especially given that, concerning social conflict, alternative strategies exist to protect their privacy. They are therefore expected to attribute more importance to privacy protection features related to data mining and identity theft when given the option.

H1: Respondents will attribute more importance to privacy protection features against data mining and identity theft than to privacy protection features against social conflict.

As discussed earlier, the fact that SNSs are most popular among younger individuals, does not necessarily say much concerning their privacy appreciation, since SNSs are a useful social tool for them to accomplish several important developmental tasks: forming new friendships and creating their identity and reputation (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; boyd, 2008; Ellison et al., 2007; Lampe et al., 2006; Madden & Smith, 2010; Marwick, Diaz, & Palfrey, 2010). However, younger individuals are also often found to be less concerned about their privacy compared to older individuals (Fox et al., 2000; "Online privacy worries increase with age", 2009; Paine et al., 2007; Zukowski & Brown, 2007).

One explanation given for this is that young and old differ in what they consider privacy to entail. Some studies report that younger individuals might be more concerned with protecting their privacy in relation to social conflict (boyd & Marwick, 2011; Livingstone, 2008; Marwick et al., 2010; Raynes-Goldie, 2010), as opposed to data mining and identity theft. Privacy violations by known others are especially important during the sheltered life of young people in the parental home. The role of institutions, such as the government, and strangers can be expected to become more prominent as the individual grows to adulthood (Steijn, Schouten, & Vedder, submitted; Steijn & Vedder, submitted). This is also in keeping with CPM theory which states that as individuals grow older their desired privacy boundaries will also evolve to control the private information about themselves (Petronio, 2002, p. 8). Therefore the following hypothesis was formulated:

H2: Younger respondents, compared to older individuals, will attribute more importance to privacy protection features against social conflict.

CPM theory also states that in the case of turbulence, or privacy violations, individuals will be motivated to adjust their privacy boundaries (Petronio, 2002), which could be either normative or physical. Indeed, several studies report a reactive attitude of users concerning their online privacy settings. Debatin and colleagues found that respondents who actually experienced a privacy violation, as opposed to hearing about it happening from others, were more likely to take steps to protect their online privacy (2009). Similarly, Govani and Pashley (2007) concluded that raising the awareness of privacy threats is not enough to nudge people into protecting their privacy. It is therefore likely that a relationship exists between the importance individuals attribute to different privacy protection features and any negative consequences they may have experienced on SNSs. Thus, the following hypothesis was formulated:

H3: Respondents who have experienced a negative consequence of using SNSs will attribute more importance to privacy protection related to that experience.

Furthermore, we are interested in knowing how many respondents would be willing to change to a different SNS provider. We expect few respondents will be willing, because they are bound to their SNS through their social network also being present on that site. For this purpose, we formulated the following hypothesis and research question:

RQ1: How many respondents are willing to change to a different social network site provider.

METHOD

This study employed choice-based conjoint (CBC) analysis in order to be able to compare the relative importance attributed to various privacy protection features. In a traditional CBC design, respondents are given several discrete choice tasks of selecting a concrete offering out of a selection of products with several features which differ over several levels. This could for example concern pizzas, which vary in the features price (e.g., with the levels cheap versus expensive), size (e.g., large versus small), toppings (e.g., cheese versus salami) and brand (e.g. unknown versus familiar). The respondents would be presented with several different pizzas and asked which they would be most likely to buy. When the resulting trade-off decision is repeated several times, the relative value of each feature can be determined; will people buy a pizza based on the price or the brand? In addition, it can be determined which level of these features is most preferred; would they rather have cheese or salami as a topping.

For the current study, respondents were presented with several scenarios depicting hypothetical SNSs and were questioned regarding which SNS they would prefer to create a profile. The SNSs varied based on 6 features affecting the protection against data mining, identity theft, or social conflict: *data ownership*, *access by third parties*, *real information*, *private profile*, *visibility of visitors*, and *tagging*. An overview of the features and the levels in which they vary during the discrete choice tasks is given in Table 1.

Generally, all features included a level for the presence or absence of a privacy protective setting or policy. An additional level was added for *data ownership*, *access third parties*, *private profile*, and *tagging* in which the user had control over the feature. The feature real information included levels which varied in the sensitivity of the information required to be provided (i.e. an email-address versus a telephone number), and whether the obligatory information should also be visible on the profile.

Table 1. — *Overview Features and Levels from the Choice-Based Conjoint Study*

Feature	Level	
Data ownership	— No ownership of data by SNS.	O1
	— Ownership of data by SNS, until deleting profile.	O2
	— Ownership of data by SNS, also after deleting profile.	O3
Access by third parties	— Third parties cannot access and use personal data.	A1
	— Third parties can only access and use personal data with permission.	A2
	— Third parties can access and use personal data without permission.	A3
Real information	— No obligatory information necessary.	I1
	— Real email-address must be entered, but not obligatorily shown on profile.	I2
	— Real email-address must be entered, and must be shown on profile.	I3
	— Real telephone number must be entered, but not obligatorily shown on profile.	I4
	— Real telephone number must be entered, and must be shown on profile.	I5
Private profile	— Private profile and sorting of contacts.	S1
	— Private profile but no sorting of contacts.	S2
	— No private profile and no sorting of contacts.	S3
Visibility of visitors	— Profile visitors are not visible.	V1
	— Profile visitors are visible.	V1
Tagging	— Photos cannot be tagged.	T1
	— Photos can be tagged, only with permission.	T2
	— Photos can be tagged, without permission.	T3

Each of these features affects the privacy protection against data mining, identity theft, or social conflict differently. The features *data ownership* and *access by third parties* primarily concern the protection against data mining. The features *tagging* and *visibility of visitors* concern the protection against social conflict. The feature *real information* affects both identity theft and data mining. Comparison of the level I1 (i.e., no obligatory information required) versus the other levels (i.e., obligatory information required) concerns data mining, as it distinguishes having

to share the information online or not. Comparison of the levels I2 and I4 (i.e., obligatory information not shown on profile) with I3 and I5 (i.e., obligatory information shown on profile) concerns identity theft as it distinguishes whether the obligatory information is visible on the personal profile. Similarly, the feature *private profile* affects both identity theft and social conflict. Comparison of S3 (i.e., no private profile) versus S1 and S2 (i.e., a private profile) concerns identity theft as it distinguishes between whether strangers can access the profile. Comparison of S1 (i.e., sorting of contacts) and S2 (i.e., no sorting of contacts) concerns social conflict as it distinguishes between whether different social spheres, such as friends and family, can be kept separate. As such, inspection of the importance attributed to each feature and level will give us information about whether the respondent prioritizes privacy protection against data mining, identity theft, or social conflict.

The SNSs were presented to respondents in the form of an online questionnaire. The online survey was conducted by the research institute TNS-NIPO by means of the CAWI-method (computer assisted web interviewing), which allows respondents to participate from their own computer at home. The questionnaire consisted of three parts.

The first part contained instructions that explained the content of the questionnaire. All features and their levels were explained in the instruction, to make sure all respondents had a similar understanding of what the different levels entail.

The second part consisted of the actual discrete choice tasks. Respondents were presented with 15 discrete choice tasks each. Each task consisted of three different SNSs from which respondents had to choose the one they preferred. Figure 1 shows an example of a discrete choice task as presented to the respondents. All the possible combinations of levels were equally represented throughout the experiment.

The third part contained a short questionnaire with several follow-up questions to further explore the motivation behind the choices participants made. First, respondents were asked to indicate which of the features had been most important for their decision-making. Next, respondents were asked if they were willing to switch to another social network site provider. If so, they were subsequently asked what their primary reason would be. Lastly, two yes/no questions identified whether respondents were specifically concerned about something when using their profile and whether they had had a negative experience due to using their profile. When answered with a yes, respondents were further prompted to describe what exactly they were concerned about or had experienced. Subsequent

responses were categorized as *Misuse information*, *Privacy* (general) (e.g. greater visibility or other general statements about privacy), *Criminals* (e.g. hackers or burglars), *undesired contact*, *social conflict* (e.g. bullying or fights), or *other* (e.g. technical problems). Four raters categorized the responses independently and interrater reliabilities were acceptable for both *concerns* (Kappa's ranging from .727 to .807) and *negative experiences* (Kappa's ranging from .626 to .694). Disagreements were resolved through discussion.

If you have to choose between the three social network sites below, which would you choose?

Data ownership	Ownership data by SNS, also after deleting.	Ownership data by SNS, also after deleting.	No Ownership data by SNS.
Access by	Third parties can access and use personal data, without permission.	Third parties cannot access and use personal data.	Third parties cannot access and use personal data.
Real Information	Real e-mail address must be entered and shown on profile.	No obligatory information required.	Real telephone number must be entered and shown on profile.
Private profile	You can shield your profile and sort you contacts.	You cannot shield your profile.	You can shield your profile but cannot sort your contacts.
Visibility of visitors	Visitors are visible.	Visitors are not visible.	Visitors are visible.
Tagging	Photos cannot be tagged.	Photos can be tagged, only with permission.	Photos can be tagged without permission.
	O	O	O

Figure 1. — Example of the screen presented to respondents.

PARTICIPANTS

Respondents were recruited from participants of an earlier study on privacy and user behaviour on social network sites, which were obtained by means of a stratified sampling procedure. Five hundred and sixty respondents (327 female, 233 male, $M_{\text{age}} = 30.36$, $SD = 16.83$) completed the questionnaire: Table 2 gives an overview of the age and gender distribution. We distinguished between adolescents (12- to 19-year-olds), young adults (20- to 30-year olds), and adults (31-year-olds and older) for comparative purposes. All respondents were members of Facebook or Hyves. Respondents were rewarded for their participation with points through which they could obtain coupons at TNS-NIPO. Informed consent was obtained from all respondents aged over 18, and parents provided consent for those younger than 18 years of age.

Table 2. — *Age, Gender, and Profile of Respondents Across Age Groups*

	Adolescents	Young Adults	Adults	Total
<i>N</i>	200	144	216	560
Age	14.7 (2.0)	25.2 (3.3)	48.32 (12.5)	30.4 (16.8)
Gender (male)	42.0%	36.1%	44.9%	41.6%
Facebook	15.5%	42.4%	31.9%	28.8%
Hyves	23.5%	4.9%	12.0%	14.3%
Both	61.0%	52.8%	56.0%	57.0%

Note. Age provides means with standard deviation in brackets. For gender, the percentage males are provided.

ANALYSIS PLAN

TNS-NIPO makes use of the simulation tool ‘Valuemanager’ for conjoint analysis, which provides two statistics of interest: (1) *importance percentages*, and (2) *utility scores* (see also Orme, 2010, chapter 9). An importance percentage is calculated for all six features. This percentage is an estimation of how many decisions were primarily based on each specific feature. The importance percentages of all features add up to 100. The utility score provides the relative importance for each level within a feature. This utility score cannot be compared between features, but within a certain feature it is possible to determine which level was preferred most (provided the most utility) by respondents in their decisions.

The utility scores of the levels within a feature add up to 0. As a result, a negative utility does not necessarily mean that a specific level was disliked; other levels within that feature were simply preferred.

In order to analyse the importance percentages obtained through conjoint analysis and other percentages, one sample t-tests between percents were used. For the comparison between groups one-way ANOVA's and χ^2 analyses were used. Bonferroni post-hoc analyses were used to examine significant one-way ANOVA results, whereas the adjusted standardized residuals were compared for significant χ^2 's.

RESULTS

IMPORTANCE PERCENTAGES AND UTILITIES

Before testing the first hypothesis, the utility scores were inspected to gain insights into respondents' decision patterns. Table 3 shows that rather than each feature having a level that was clearly preferred over the others, each feature had a level that is clearly less preferred compared to the other levels. This means that decisions were primarily based on avoiding certain levels, as opposed to picking SNSs which contained at least a certain level of privacy protection.

Only for *tagging* did a clear preference for a certain level seems to exist; tagging should be possible, but only with permission (T2). Concerning the other features, the respondents clearly disfavoured SNSs where: SNS had ownership over the data, even after deleting the profile (O3), third parties can access and use personal data without permission (A3), a real telephone number must be provided and must be shown on profile (I5), access to the profile cannot be limited to contacts only and where the contacts cannot be sorted into groups (S3), profile visitors are visible (V1), and photos can be tagged without permission (T3).

The utilities show that the levels that provide respondents with control (in the form of having to give permission) were most preferred. Furthermore, the utilities concerning the feature real information suggest that respondents were primarily concerned with having to show contact information on their profile rather than having to share a telephone number with the SNS per se. Requiring a telephone number to create a profile was preferred over the requirement of a visible email address, but a required (not visible on the profile) email address was preferred over no required information at all. This suggests that respondents had little problem with providing contact information to the SNSs, but were concerned about the possibility that strangers might be able to access the contact information.

Table 3. — *Utility Scores Obtained Through Conjoint Analysis*

Features	Level	Utility
Data Ownership	O1	34,5
	O2	24,0
	O3	-58,5
Access by third parties	A1	26,0
	A2	36,4
	A3	-62,3
Real information	I1	36,1
	I2	46,5
	I3	-22,7
	I4	21,5
	I5	-81,4
Private profile	S1	32,2
	S2	21,9
	S3	-54,0
Visibility of Visitors	V1	0,5
	V2	-0,5
Tagging	T1	0,4
	T2	19,7
	T3	-20,1

Note. See Table 2 for the content of the levels.

We then investigated the importance percentages obtained through conjoint analysis to test the first hypothesis: respondents would attribute more importance to privacy protection from data mining and identity theft. *Real information* was deemed most important (26.4%) followed by *data ownership* (20.8%), *access by third parties* (19.6%), *private profile* (16.6%), *tagging* (11.6%), and *visibility of visitors* (5.0%). These percentages support the hypothesis that respondents attribute most importance to privacy protection against data mining and identity theft. The features concerning privacy protection against data mining and identity theft, i.e. *real information*, *data ownership*, and *access by third parties*, determined the decision of respondents in 66.8% of all discrete choice tasks, which is significantly more often than the remaining features which primarily concerned social conflict, $t(559) = 8.44, p < .001$.

The responses to the question “which of the features had been most important for respondents in making their decisions”, shows a different picture from the one presented by the importance percentages obtained through the conjoint analysis. Only 10% of respondents reported *real information* to be the most important feature for their decisions, whereas 44.3% of all respondents reported private profile to be the most important feature.

Table 4 shows both the importance percentages obtained through conjoint analysis and the percentage of individuals reporting which feature was most important for their decisions. When comparing the self-reported importance of the features for decision making with the importance percentages of the features obtained through conjoint analysis, a clear discrepancy can be seen. Respondents claimed that the feature *private profile* was most important for their decisions related to social conflict. Yet, the importance percentages suggest that three other features were actually more important in their actual decisions, that is: *real information*, *data ownership*, and *access by third parties*, each related to data mining or identity theft.

Table 4. — *Importance Percentages Obtained Through Conjoint Analysis and Self-Reported Importance for Decision Making Attributed to Features.*

	Importance percentage	Self-reported importance
Real information	26.4%	10.0%
Data ownership	20.8%	26.4%
Access by third parties	19.6%	11.1%
Private profile	16.6%	44.3%
Tagging	11.6%	1.6%
Visibility of visitors	5.0%	3.6%
None/Don't know	—	1.3%

WILLINGNESS TO SWITCH SNSs

We then set out to answer the research question concerning how many respondents would be willing to switch to a different SNS provider. In total 201 (35.9%) respondents indicated they would be willing to switch. Responses to the question when they would be willing to switch could be grouped in several categories. Most respondents willing to switch mentioned they would change only if their friends would change as well (36%) or if their privacy was better

protected at the other site (33%). Alternatively, respondents would be willing to switch if the other site might be easier, better, or more fun (20.3%), or they would switch for another reason (10.7%). Of the 359 (64.1%) respondents not willing to change, the most often given reason was that they were satisfied with their current SNS (54.2%), followed by, that it would cost too much time and effort (10.2%), they are using their current profile little as it is (9.6%), it would result in even more information on the internet (3.1%), and other reasons (8.2%).

These results allow us to answer our research question concerning how many respondents would be willing to switch to a different SNS provider. A majority of respondents indicated to be unwilling to switch to a different SNS provider. Furthermore, a third of the respondents willing to change reported that they would only do so if their current social network (i.e., their friends) switched as well.

AGE BASED DIFFERENCES FOR IMPORTANCE PERCENTAGES

Our second hypothesis stated that in comparison to older individuals, younger individuals would attribute more importance to privacy protection against social conflict. Investigation of the importance percentages through one-way ANOVA's did not provide any support for this hypothesis. For none of the features was a significant age effect found: *real information*, $F(2,557) = 2.93$, $p = .054$, *data ownership*, $F(2,557) = 0.95$, $p = .389$, *access by third parties*, $F(2,557) = 1.09$, $p = .336$, *private profile*, $F(2,557) = 1.21$, $p = .298$, *tagging*, $F(2,557) = 1.20$, $p = .303$, and *visibility of visitors*, $F(2,557) = .10$, $p = .904$.

Investigation of the self-reported importance of the features with χ^2 analyses, however, did provide some support for the hypothesis. A significant age effect was found for *private profile*, $\chi^2(2, 560) = 6.97$, $p = .031$, and for *visibility of visitors*, $\chi^2(2, 560) = 6.51$, $p = .039$. Investigation of the adjusted standardized residuals (ad. res.) showed that significantly more adolescents (ad. res. of 2.0 and 2.0 respectively), but fewer adults (ad. res. of -2.6 and -2.5 respectively) reported these features as most important for their decision making compared to the total percentage of respondents reporting these features as most important. No age effect was found for *real information*, $\chi^2(2, 560) = 0.86$, $p = .650$, *data ownership*, $\chi^2(2, 560) = 5.63$, $p = .060$, *access by third parties*, $\chi^2(2, 560) = 2.94$, $p = .230$, and *tagging*, $\chi^2(2, 560) = 1.83$, $p = .400$.

To summarize, while no concrete differences were found between the age groups concerning the importance percentages obtained through analysis, some differences were found for the self-reported importance of the features. This

suggests that while respondents of all ages made similar decisions during the discrete choice tasks resulting in similar importance percentages, adolescents and adults differ in which feature they thought was most important. In keeping with the second hypothesis, more adolescents and fewer adults, reported features to be important that are related to social conflict.

CONCERNS AND EXPERIENCED NEGATIVE CONSEQUENCES

First, respondents' responses to what they were concerned about when using SNSs were investigated. Of all respondents, 228 (40.7%) reported to be concerned with something when using their profile. Table 5 provides an overview of what respondents were concerned with. Overall, significantly fewer adolescents (32%) reported being concerned when using their profile compared to young adults (52.8%) and adults (41.2%), $\chi^2(4, 560) = 18.64, p = .001$.

Privacy (general) was mentioned as a concern most often (41.2%) followed by *misuse information* (32.5%), *criminals* (12.3%), *undesired contact* (7.0%), *social conflict* (4.8%), and *other* (2.2%). Significantly more adults and fewer adolescents were concerned about *misuse information*, $\chi^2(2, 228) = 9.72, p = .008$. No age differences were found in the number of respondents who were concerned with *privacy* (general), $\chi^2(2, 228) = 4.94, p = .085$, *criminals*, $\chi^2(2, 228) = 4.29, p = .117$. Due to the low number of respondents reporting undesired contact, social conflict, and other, these variables could not be reliably analysed, although a trend is visible in Table 5 that more adolescents reported the former two.

Eighty-one respondents (14.5%) reported having actually experienced a negative consequence from their presence in an SNS. Table 5 shows which negative consequences were experienced by respondents. No age differences were found in number of respondents reporting negative experiences, $\chi^2(2, 560) = 3.39, p = .183$.

Social conflict was the most reported negative experience (41.2%), followed by *privacy* (general) (17.3%), *other* (16.0%), *undesired contact* (14.8%), *misuse information* (8.6%), and *criminals* (6.2%). The low number of respondents does not allow a reliable comparison between the age groups. However, a higher percentage of adolescents reported *social conflict*, while fewer young adults reported *undesirable contact* and *misuse information*. *Privacy* (general) and *criminals* were reported by more young adults.

These results tentatively suggest that differences do exist between the online experience of privacy of younger and older individuals in keeping with the expectations of hypothesis 2. Adolescents appear to be more concerned about social conflict, and report to have experienced it more often.

Finally, to investigate hypothesis 3, in which we predicted a relationship between the attribution of importance to privacy protection features and experienced negative consequences, the relationship between negative experiences and the importance percentages obtained from analysis was explored. A significant relationship was found between the reported negative experiences and the feature data ownership. Respondents who reported having experienced a negative experience had a significantly higher importance percentage (23.6%) for the feature data ownership than those who reported not having experienced a negative experience (20.3%), $F(1,559) = 6.330$, $p = .012$, $\eta^2 = .01$.

Table 5. — *Reported Concerns or Experienced Negative Consequences from Using Social Network Sites.*

	Adolescents	Young Adults	Adults	Total
Concerns				
<i>N</i>	64	76	88	228
Misuse information	21,9%	27,6%	44,3%	32,5%
Privacy (general)	34,4%	51,3%	37,5%	41,2%
Criminals	10,9%	18,4%	8,0%	12,3%
Undesired contact	17,2%	1,3%	4,5%	7,0%
Social Conflict	12,5%	1,3%	2,3%	4,8%
Other	3,1%	0,0%	3,4%	2,2%
Experienced				
<i>N</i>	35	15	31	81
Misuse information	0,0%	13,3%	16,1%	8,6%
Privacy (general)	17,1%	6,7%	22,6%	17,3%
Criminals	2,9%	20,0%	3,2%	6,2%
Undesired contact	5,7%	26,7%	19,4%	14,8%
Social Conflict	57,1%	20,0%	22,6%	37,0%
Other	17,1%	13,3%	16,1%	16,0%

Further investigation showed that only respondents who experienced misuse of their information attributed more importance to data ownership. The importance percentage for these respondents was 35.1% compared with the average importance percentage of 23.6%. However, due to the low number of respondents involved in this analysis, the results were not significant. Therefore, only marginal support was found for the hypothesis. No statistically significant relationship was found between reported concerns and attributed importance to the various privacy protection features.

DISCUSSION

This chapter's main objective was to compare the relative importance SNS users attribute to privacy protection against potential violations through data mining, identity theft, and social conflict. The results show that respondents of all ages attribute importance to privacy protection against data mining and identity theft. Furthermore, respondents display decision patterns primarily aimed at avoiding obvious privacy violations as opposed to achieving the best possible privacy protection. The implications are discussed below.

As stated in the first hypothesis, respondents were found to attribute most importance to privacy protection features against data mining and identity theft. Thus, SNS users' privacy concerns appear to match the privacy threats given most attention by academia and media alike (Acquisti & Gross, 2006; Andrews, 2012; Debatin et al., 2009; Govani & Pashley, 2005; Gross & Acquisti, 2005; Noda, 2009; Timmer, 2009). This suggests that all respondents were, at least to some degree, aware of the possible dangers and thus the importance of protection against these potential privacy threats.

In the introduction, it was argued that individuals' online behaviour should not be used as a gradient for their privacy concerns, because SNSs are primarily used for the possibilities they create for social interaction (Ellison et al., 2007; Steinfield et al., 2008). Indeed, only a third of the respondents reported to be willing to switch in answer to our research question. Furthermore, a third of those willing to switch reported explicitly that they would only switch if their social network (of friends) would switch as well, further supporting the concept that participation is generally based on the social merits these sites provide, and the choice of SNS thus largely depends on where the social network of the individual is present.

In other words, the social utility of SNSs appears to be an important reason for why individuals make use of the sites and that they thus have to accept the

potential privacy threats as a cost of participation. Given the massive popularity of SNSs—Facebook has over 1 billion users²—non-participation could even be associated with social costs by individuals as they miss out on the social interaction (Raynes-Goldie, 2010). As a result even privacy-concerned individuals are likely to participate on SNSs. Since the business model of SNSs depends on their users sharing information as openly as possible (Andrews, 2012; Pékarek & Leenes, 2009), safeguarding the privacy of their users is unlikely to be their priority.

Partial support was found for the second hypothesis which stated that younger respondents would attribute more importance to protection features against social conflict. No significant differences were found for the importance percentages obtained through conjoint analysis. However, we did find that more adolescents reported two features related to social conflict to be most important for their decision making. This result is in keeping with previous studies suggesting youth to be more concerned about their privacy in relation to social conflict with known others (boyd & Marwick, 2011; Livingstone, 2008; Marwick et al., 2010; Raynes-Goldie, 2010). Furthermore, our data showing trends that adolescents reported fears or negative consequences related to social conflict provides some support that these privacy concerns play a greater role for youth.

A possible explanation for the lack of differences between the age groups concerning the importance percentages obtained through conjoint analysis could be that users have numerous other tools to safeguard their privacy concerning social conflict. Even without the features used in this study, young people have several options to safeguard their privacy concerning social conflict. For example, by using multiple sites, or by using more private channels for more intimate interactions (boyd & Marwick, 2011, p. 14; Lampinen et al., 2009; Stutzman & Hartzog, 2009). Conversely, users are fully dependent on the settings and policies provided by the SNS platform concerning their privacy protection against data mining and identity theft, especially if deception is not possible or desirable. As a result, even if younger individuals are more concerned about avoiding social conflict they may still have prioritized their privacy protection against data mining and identity theft in this study, because they have no control over these forms of privacy other than the features the SNS provides³.

The lack of differences in importance percentages obtained through conjoint analysis does suggest that even young respondents are aware of the importance of privacy protection features on SNSs against data mining and identity theft. It is noteworthy that respondents of all ages (i.e. even 12-year-olds and adults) attributed similar importance to all privacy protection features, especially since

³ New developments like the Google dashboard may give users more control in time in this respect. Google Dashboard promises users more transparency and control concerning the information linked to their google accounts: <https://accounts.google.com>.

younger individuals are often considered to care less about their privacy than adults, and social conflict appears to be the more prominent concern for them. These results suggest that SNS users of all ages still attribute importance to their privacy protection from data mining and identity theft, even though their intensive use of SNSs makes them vulnerable to these threats.

A distinctive pattern was found in the utility scores. Instead of demonstrating a clear preference, respondents demonstrated a clear dislike (relative to the other levels) for a certain level of each feature. In other words, respondents' decisions during the discrete choice tasks were not necessarily based on obtaining a certain ideal SNS concerning privacy protection, but mainly on avoiding unacceptable privacy violations. When looking at *real information*, for example, respondents did not primarily pick the SNSs in which they did not have to fill in any information (in fact having to provide an email address, not shown on the profile was preferred over having no obligatory information), but mainly avoided those SNSs which required them to show the information on their profile. At that point the privacy situation apparently became unacceptable for respondents.

The previously described decision pattern seems related to the fact that individuals often take active steps to protect their privacy after an incident. Here, however, only marginal support was found for the hypothesis that respondents' importance attribution to privacy protection features would be related to experienced negative consequences. Respondents who reported their data having been misused, did attribute more importance to the feature *data ownership*, but this was not statistically significant. This could be the result of the low number of respondents reporting having experienced a negative consequence, or could simply mean that this relationship does not exist. Future studies may want to explore this more elaborately.

A negative incident is often the first clear sign that privacy protection was lacking. Therefore, individuals may be under the impression that their privacy protection is good enough until it is too late. This may either be due to their lack of accurate knowledge on how well protected they are (Hoofnagle, King, Li, & Turow, 2010), or that they do not expect to be singled out among all the other SNS users (e.g. "Safety in numbers", see Grimmelman, 2009, p. 1161). As a result, individuals can only be expected to take action once their lack of privacy protection has become visible through a negative experience, as opposed to continuously trying to obtain the best privacy protection. The results presented here do not give any certainty considering this issue.

The focus on avoiding unacceptable privacy violations might also be related to the discrepancy found between the main features for decision making resulting from conjoint analysis, i.e., *real information*, *data ownership*, and *access third parties*, and what respondents reported to be the main feature, i.e., *private profile*. Although the former three features were the most prominent for decision making according to conjoint analysis, the decision for these features may have been made by “rule of thumb”: if the level to be avoided was present, that SNS would not be chosen. As mentioned before, for the feature *private profile*, numerous alternatives exist for SNS users to protect their privacy, while for the other three features concerning data mining and identity theft, they are primarily dependent on what the SNS provides.

LIMITATIONS

This study made use of a CBC design to assess the preferred privacy protection of SNS users. The used descriptions per level in this experiment were long compared to usual discrete choice tasks making the decision making more difficult. When discrete choice models become too complex, respondents may resort to simplified decision strategies. Instead of assessing the entire scenario, they mainly focus on one or two features that are important to them. In this case it could have occurred for real information, and especially for the level which required a telephone number to be provided which would be visible on the profile. This may have been particularly unacceptable, causing some respondents to base their decision primarily on this.

A second limitation is the fact that the features of the presented SNSs only consisted of privacy related features. No features were included concerning the services an SNS provides (e.g., gaming or interaction possibilities), possible costs (e.g., monthly fee), or other concerns (e.g., safety). The aim of the current study was to distinguish between the attributed importance to privacy protection from various risks. Additional non-privacy related features would have made the SNSs too large for respondents to make repeated concentrated rational decisions. Therefore, no conclusions can be drawn on how important privacy protection is in relation to the provided services, costs, or other concerns. Future studies might want to use a similar set up with non-privacy related features in order to investigate the relative importance of privacy protection in relation to these other factors.

CONCLUSION

The results show that respondents of all ages prioritize privacy protection features against data mining and identity theft over those protecting social conflict, when offered concrete choices between the two. This was even the case for the adolescents in this study, even though social conflict was the most prominent concern during that life phase. Here it was argued, that SNSs are used for their social merits, and individuals generally have little choice on which SNS to use. As a result, users are dependent on the SNS platform to provide the necessary privacy protection against the privacy threats of data mining and identity theft. Our results demonstrate that the lack of these features in real life does not necessarily mean that the users no longer care about the privacy threats they are left exposed to.

A recent initiative, The Brussels Privacy Declaration, calls for attention to be paid to the need for regulation of privacy rights online. The results presented here further support the urgency for the development of regulation of online privacy. Even though SNS users are aware of the importance of privacy protection against data mining and identity theft, they generally seem not to optimize their privacy protection. Instead, they appear to settle for what they perceive as good enough, which is avoiding the obvious and worst privacy violations. In addition, users are generally dependent on the service provider concerning what privacy protection is available. As such, the need for regulation is great; SNS users cannot be expected to protect their own privacy optimally, certainly if the only way to perfectly maintain the online boundaries is by not participating.

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CHAPTER 7

The role of informational norms on social network sites.

ABSTRACT

Social norms regarding how information is shared can play an important role in regulating privacy in everyday life, yet little is known concerning how these informational norms play a role in regulating an individual's privacy on social network sites. There are two types of informational norms: norms of appropriateness and norms of distribution, which both govern privacy in social interaction. This research study investigates the adherence by users to these informational norms on social network sites and the role these norms play in relation to online privacy and the differences which are often observed in online behaviour between old and young. Data were collected by means of a questionnaire from among 1,002 social network site users, including adolescents, young adults, and adults. The results provide insight into the role of informational norms on social network sites: the normative expectations associated with a social network site indicate that these sites are thought to be public, that adolescents and young adults primarily differ from adults in their adherence to norms of appropriateness, and that a close relationship can be found between the adherence to informational norms and actual information sharing. It was concluded that the role informational norms play in understanding online behaviour should not be underestimated, although these norms cannot yet be regarded as effective regulators for online behaviour.

Chapter adapted from;

Steijn, W.M.P. (2013). The role of informational norms on social network sites.
Accepted for publication.

INTRODUCTION

Social norms play an important role for our privacy in everyday life by regulating the shared information during interactions (Schwartz, 1968, p. 742; Nissenbaum, 2004; 2010). However, little is known concerning the role such norms play in regulating individuals' privacy during their online interaction on social network sites (SNSs). The behaviour of youth on SNSs has been found to be remarkably similar to offline behaviour; social interaction with friends that used to occur on the playing field now takes place on SNSs (boyd, 2008; Herring, 2008; Marwick, Diaz, & Palfrey, 2010). The norms regulating the shared information during offline interactions might not have completely made this transition to online interactions. As a result, opinions may differ on what is appropriate to share on an SNS profile and whether this information can be shared outside the SNS context. Discrepancies in normative expectations that are related to information sharing on SNSs could explain, for some part, the differences between younger and older individuals' online privacy behaviour and why the youth appear to be careless with their privacy (Debatin, Lovejoy, Horn, & Hughes, 2009; Govani & Pashley, 2005; Gross & Acquisti, 2005).

This study aims to contribute to the existing body of knowledge concerning information sharing on SNSs and online privacy by investigating the adherence, or non-adherence, of users to online social norms regarding the sharing of information (henceforth, *informational norms*). By investigating the role informational norms play on social network sites, a better understanding of online behaviour in general can be obtained, but this will also provide additional insight into the differences which have been observed between younger and older individuals' behaviour on SNSs, and their expectation regarding online privacy, as these norms may play a more important role in the way the youth establish their online privacy (boyd & Marwick, 2011). Therefore, this study will address three main research questions. The first question concerns whether a distinct normative expectation has been developed for sharing information on SNSs in comparison to sharing information during a public or private offline interaction. The second question concerns how younger and older SNS users differ in their adherence to informational norms associated with SNS profiles. And the third concerns the relationship between actual information sharing and reported adherence to informational norms when compared with concern regarding privacy and with the use of privacy settings.

BACKGROUND

Social norms have been identified in combination with market, architecture, and law as external regulators of behaviour (Lessig, 2006) and all four are also related to the sharing of information on SNSs. Law primarily regulates SNS users' privacy from data collection practices by institutions, but it has been found that individuals' knowledge of privacy law and their knowledge regarding whether or not they are protected is lacking (Hoofnagle, King, Li, & Turow, 2010). From a market perspective, SNSs on the whole, push users into publishing as much information as possible since the business plan of online providers of SNSs are generally based on the sharing of information (Andrews, 2012; Pekárek & Leenes, 2009). As a result, the architecture of SNSs also invite users to share as much information as possible (Peterson, 2010) while the actual audience of the shared information is difficult to determine (Bernstein, Bakshy, Burke, & Karrer, 2013). Numerous studies have shown that privacy is still important to SNS users (boyd & Marwick, 2011; Livingstone, 2008; Marwick, Diaz, & Palfrey, 2010; Raynes-Goldie, 2010) and the role of norms may be important in respect to the other regulatory forces.

If we consider the amount of privacy one has during social interaction, both the nature of the information shared during the interaction and the degree to which the shared information is allowed to be shared with others appear to be subjects of interest (Derlega & Chaikin, 1977; Nissenbaum, 2004; 2010; Petronio, 2002). Nissenbaum (2004) identified these norms concerning information sharing as norms of appropriateness and norms of distribution, respectively. Norms of appropriateness, as the name suggests, have to do with which information is appropriate to share in a given context. Reciprocity can also be regarded as a norm of appropriateness in the sense of whether it is appropriate to reciprocate disclosures your conversation partner has made and how it subsequently affect the nature of the information shared during the interaction. Norms of distribution have to do with whether the shared information should be shared with others who were not present during the initial interaction afterwards. Similarly, the degree to which it is (un)desirable for others to overhear the conversation gives an indication of whether the shared information can be considered suitable for distributing it to others who did not take part in the conversation.

In her discussion on privacy, Nissenbaum explains how these norms are associated within a certain context (2010). We intuitively know within a given context, whether it be a business meeting or a birthday party, which information is appropriate to share and whether this information is can be shared (i.e. distributed) with others, thus, transferring the information from one context to

another. While Nissenbaum is one of the first to explicitly emphasise the role of contextual norms in relation to privacy, previous privacy theories also mentioned the importance of implicit norms for privacy (Stein & Shand, 1974; Moore, 1984; Johnson, 1989). For example, Altman (1975) described privacy as “the selective [emphasis added] control of access to the self”, and Westin (1967) described privacy as a dynamic process: we regulate privacy to fulfil momentary needs and requirements. Both definitions suggest that the context and the associated informational norms individuals themselves are deemed important in determining the amount of privacy desired.

During offline social interactions, we are normally able to identify which norms apply. As mentioned before, by taking into account where (e.g., at work or at home) and with whom (e.g., with friends or with family) we are, we know which information will be appropriate to share. In addition, we are able to recognize conventional cues of confidentiality (e.g., when an announcement is whispered or shared behind closed doors) and we know when we ought not to distribute certain information to others. As all individuals involved in face-to-face interaction often experience the same situational context, the implicit privacy expectations pertaining to the interaction based on the associated norms are often met.

Norms are generally not explicitly learned; they originate as “matters of mere convenience, repeated for their immediate value in reducing the costs involved in face-to-face influence and in smoothing out the course of the interaction. [...] The rule is likely to take on the characteristic of a moral obligation” (Thibaut & Kelley, 1959, p. 128). In other words, if a certain rule is consistently applied to a given situation, after sufficient repetition of that situation, the rule then becomes internalized and becomes implicit to that situation. This is especially apparent when new technologies are introduced to social interactions. Social norms need to develop and they will change in order to accommodate these new technologies; a process which takes time. The introduction of mobile phones, for example, seems to have changed a norm over time, making it more acceptable to have intimate conversations in public. Almost everyone has experienced at one time or another having overheard an awkward conversation in the train held by a stranger speaking on the telephone. Similarly, today it is hardly frowned upon when a person checks his or her mobile phone for the latest news or a message during a conversation.

Nowadays, norms must adapt to interactions which take place online on SNSs as well. In contrast to offline interactions, the context during online interaction on SNSs is more ambiguous and conventional cues may not apply. Information

on SNSs is shared between individuals who do not necessarily experience the same context. For example, some users may only share information with their closest friends on SNSs, whereas other users may, by default, share information with anyone who is on their friend list. Similarly, two users can differ in their privacy settings, with one using the strictest privacy settings whereas the other has left his profile wide open. Both situations are not always transparent, subsequently resulting in users differing in what they consider appropriate and whether information shared should be distributed outside of the SNS profile.

RELATED WORK

Although it seems generally accepted that norms play an important role in online privacy regulation, relatively few studies have investigated the role of informational norms on SNSs. The studies that have, which are generally focussed on adolescents, show the importance of norms for online information sharing. Based on their ethnographic approach, Ito and colleagues were able to conclude that the youth's online communications, including those taking place on SNSs, are grounded in norms of reciprocity (2008). Similarly, boyd and Marwick identified among youth an adherence to norms against the distribution of their online information outside of the context of SNSs (2011). Mesch and Beker explored the adherence of norms of appropriateness among 12- to 17-year-olds (2010). They concluded that there is a relationship between norm adherence and online disclosures.

Most of the studies that investigate the use of SNSs in relation to privacy focus on why users share information on SNSs and to what degree they manipulate their privacy settings in order to protect the information shared. In turn, most of these studies focused on young adults (Acquisti & Gross, 2006; Debatin et al, 2009; Govani & Pashley, 2005; Gross & Acquisti, 2005; Tufekci, 2008), while some compared adolescents with adults (Christofides, Muise, & Desmarais, 2012; Pfeil, Arjan, & Zaphiris, 2009). Often the conclusion has been drawn that young users do not care about their privacy since they share a great deal of information online and they do not change their privacy settings.

However, as argued before, norms may be the most important regulatory force for users to rely on so as to protect their privacy on SNSs. The role of norms is often not taken into consideration when analysing online behaviour from a privacy perspective. If we were to take the adherence to informational norms into account, this might explain why previous studies have not found any relation-

ship between concern regarding privacy and information sharing on SNSs (Acquisti & Gross, 2006; Tufekci, 2008) or why they often report the underuse of privacy settings by SNS users (Govani & Pashley, 2005). Respondents may have decided instead to rely on informational norms to protect the information they share on their profiles.

As mentioned before, one of the research goals of this chapter is to investigate the differences in norm adherence between SNS users of different age groups. boyd and Marwick (2011) have argued that for the youth, norms are regarded as an important aspect in safeguarding their privacy online. However, if these norms are not shared or recognized by older individuals, they will have different privacy expectations regarding their online information. Subsequently, if it appears that younger individuals do indeed rely differently or more heavily on norms of appropriateness and distribution on SNSs compared to older individuals, this could then help us to understand why young people often seem to have little regard for their privacy, whereas they themselves report that they are concerned about their privacy.

CURRENT STUDY

This study will contribute to the knowledge that has been acquired up until now by investigating the role informational norms of appropriateness and distribution play in relation to privacy on SNSs by addressing three research goals. First, the norms associated with sharing information on an SNS profile will be compared with the norms associated with public and private offline interaction. This will be done, in order to determine if a distinct normative expectation has developed for information shared on SNS profiles and how public or private the information shared on an SNS profile is regarded. Second, the adherence of adolescents (12- to 19-year-olds), young adults (20- to 30-year-olds), and adults (31-year-old and older) to informational norms will be compared, so as to provide additional insight into the differences which are often observed in online behaviour between young and old. Third, the relationship between informational norms and actual information sharing on SNSs will be explored, so that the actual importance of informational norms in relation to the sharing of information on SNS profiles can be assessed. Now, the exact research hypotheses and questions will be formulated.

The first research goal concerns comparing the SNS profile context with a public and private offline context. It can be expected that there is a general consensus regarding how a public and private context in offline interaction can

be distinguished in relation to the associated norms. During a private offline interaction, for example a one-on-one talk with a friend, more information is appropriate to share, but what is shared during the interaction should not be distributed further. During a public offline interaction, such as a conversation with several friends, less information is appropriate to share, but it is less objectionable to distribute what is shared during the interaction with others. SNS profiles are generally considered public spaces, but at the same time young users made a claim of privacy in these areas, claiming that parents and teachers should not look at the information shared on a profile, simply because they can (boyd, 2007; Leenes, 2010, p. 56). One might therefore wonder whether a distinct normative expectation has developed for the sharing of information on SNS profiles and whether this normative expectation suggests that the information shared should be considered public or private. This study will therefore investigate how interactions on an SNS profile can relate to a public or private offline context by addressing the following research question:

RQ1: How do informational norms associated with an SNS profile relate to the informational norms associated with an offline public or private context?

The second research goal concerns the comparison of adherence to the informational norms by three age groups. Adolescents (Christofides et al., 2012; Pfeil et al., 2009) and young adults (Debatin et al., 2009; Govani & Pashley, 2005; Gross & Acquisti, 2005) are generally found to disclose more information on SNSs than adults, and as a result, they are more likely to feel that it is appropriate to share information on SNS. One possible explanation for this is that they consider SNSs to be more private places, as opposed to adults who may consider them to be more public (boyd & Marwick, 2011). Therefore, younger individuals are expected to consider information shared on their SNS profile to not be suitable for further distribution outside of their profiles as well, as this is expected to be considered suitable only for information that is to be shared within in a public context. The following hypotheses summarise the expectations in relation to the different age groups:

H1a: Compared to adults, adolescents, and young adults will consider it more appropriate to share information on an SNS profile.

H1b: Compared to adults, adolescents, and young adults will consider information shared on an SNS profile less suitable for further distribution beyond the original context.

Finally, the third goal is to explore the relationship between the informational norms and actual information disclosure. Respondents who consider it is appropriate to be share more information on their SNS profiles, are expected to actually share more information as well. This expectation matches the results of Mesch and Beker, who found positive correlations between self-disclosure and being acquiescent to sharing offline or online personal information (2010). This chapter will expand on these findings by investigating a broader age group, but also by investigating norms of distribution as well. Individuals who consider what they share on their SNS profiles to be suitable for further distribution, are expected to disclose less. Again, these expectations have been summarized in two hypotheses:

Hypothesis 2a: Considering it more appropriate to share information on an SNS profile will be positively related to the actual sharing of information on an SNS profile.

Hypothesis 2b: Considering the shared information on an SNS profile suitable for distribution beyond the original context will be negatively related to actual sharing of information on an SNS profile.

METHOD

PARTICIPANTS

Data were collected from July 19 until August 4, 2011 by the research institute TNS-NIPO through an online questionnaire which allowed respondents to participate from their own computers at home. Respondents were recruited through a stratified sampling procedure. In total, 1,008 respondents aged 12 to 83 and who had profiles on an SNS completed the questionnaire. Six respondents were removed from the sample as they explicitly stated having created their profile merely for a different purpose (e.g. as a requirement for using another site). Of the remaining 1,002 respondents, 125 (12.5%) have a profile only on Facebook, 365 (36.4%) have a profile only on Hyves, and 512 (51.1%) have a profile on both sites. Respondents using both Hyves and Facebook were prompted to answer the items

for the SNS they used most. From the respondents who reported to use both, 268 respondents reported using Hyves the most (52.3%) versus 244 which reported using Facebook the most (47.7%).

Of all the respondents, 372 were adolescents (12- to 19-year-olds, $M = 14.60$, $SD = 2.16$), 277 were young adults (20- to 30-year-olds, $M = 25.55$, $SD = 3.10$), and 353 were adults (31-year-olds and older, $M = 46.22$, $SD = 12.12$). Respondents were asked for their consent to participate in the research survey and parents provided consent for individuals younger than 18 years of age. All respondents were rewarded with special points upon the completion of the questionnaire, which they can trade for various coupons with TNS-NIPO.

Gender distribution was uneven over the three age groups with 47.0%, 28.9%, and 41.1% males respectively. To control for possible gender differences when exploring the differences between the age groups, the analyses between age groups were done twice: once with the normal data and once with all cases weighted for gender distribution¹. The weighted analysis did not show any meaningful deviations. Therefore, the data without weights have been used and will be reported here.

MEASURES

This study explored which norms exist on SNSs and their role in relation to information disclosure. We investigated adolescents, young adults, and adults to find differences in what norms they consider to apply for information shared during a public conversation with a group of friends (*public context*), a private conversation with one friend (*private context*), or sharing information with contacts on an SNS profile (*profile context*). Of interest were norms of appropriateness, which concerns which information is deemed appropriate and whether reciprocity can be expected, and norms of distribution, which concern how public the shared information is and whether information is allowed to be distributed to others. In addition, their role in relation to information disclosure on social network sites, when controlling for *privacy concern* and *private profile*, was explored.

Norms of appropriateness. In order to assess the norms of appropriateness, respondents' adherence to reciprocity and the amount of information they considered to be appropriate in a given context was assessed. Here, we included reciprocity among norms of appropriateness because the norm of reciprocity ultimately affects what an individual considers to be appropriate for sharing during the interaction. Reciprocity was assessed through three items for each

¹ Weights were obtained by dividing the population distribution with the sample distribution. Information concerning the population gender distribution of the Netherlands were retrieved from statline.cbs.nl in August 2011.

context on a 4-point Likert scale from 1 (completely disagree) to 4 (completely agree), and an option don't know. Respondents were asked in each context whether they agree with the following statements (deviations from the formulation for the SNS profile items between parentheses): I tell them (share) as much about myself as they (contacts) tell (share) about themselves, I believe everyone has (all contacts have) the right to know the same amount about each other, they (contacts) should tell (share) as much about themselves as I do. For each context, the three items were reduced to a single reciprocity scale with a Cronbach alpha of .773, .863, and .812, for the public, private, and profile context, respectively.

In addition, respondents were presented with a list of 15 topics and asked to mark the topics they thought appropriate to share in each context (*appropriateness*). Respondents had to judge the 15 topics separately for each of the three contexts. The list consisted of the following topics: *health, educational or work results, current education or work, finance, relation, family, religion, political preferences, parties, sensitive topics, personal success, personal worries, home address, telephone number, interests*. The resulting scale ran from 0 to 15.

Norms of distribution. The norms of distribution were assessed through using three items on a 4-point Likert scale from 1 (completely disagree) to 4 (completely agree), and an option *don't know*. These items concerned the informational flow out of the context by the self (*information flow self*): I tell others what I have heard during the conversation (seen on Facebook/Hyves); the informational flow out of the context by others (*information flow others*): everything I tell during the conversation (share on my profile) about myself to my friends (contacts) can be told to others (non-contacts); how public the conversation or information is considered to be (*publicity*): others are allowed to listen in on the conversation (non-contacts are allowed to look at the information I share). Each item addresses a unique aspect of distribution, reflected in relative low Cronbach's alpha when scaled (profile context, $\alpha = .645$; private context, $\alpha = .732$; public context, $\alpha = .572$). We have therefore addressed them separately in the analysis.

*Information Disclosure*². Profile information and information shared through public posts were addressed separately. Respondents were asked to indicate whether they shared each of the following 12 types of profile information using yes/no questions: *name, age, gender, birthday, address (city), address (street name, and number), e-mail, relationship status, current work or school, religion, interests, and phone number*. Next, respondents were asked how frequently they shared a public post on their profile using on a 7-point scale: 1) *never*; 2) *once a month*; 3) *several times a month*; 4) *once a week*; 5) *several times a week*; 6) *once a day*; 7)

² These scales are also used in Chapter 2 (p.35) and from the same dataset.

several times a day. Furthermore, respondents were asked if they discuss the following 11 topics in their public posts using yes/no questions: *health, school/work results, finance, relationships, family, religion, politics, parties, emotional topics, personal success, and personal worries*.

*Private Profile*³. Of interest was whether respondents have manipulated their privacy settings to only allow contacts to access the information shared on the profile. Response possibilities were *I know and I have done so, I know how to but I did not do so, I don't know how, but I let someone do it, and I don't know how and I have not let someone do so*. The majority of respondents reported having manipulated the settings themselves or not at all. Therefore, responses were collapsed into the dichotomous variable *done* and *not done*.

*Concern regarding privacy*⁴. In order to assess how concerned individuals are with their privacy, they were asked whether they were concerned about their privacy, think their privacy is important, feel they have too little privacy, and consider the internet as a threat to their privacy. Ratings were made on a 4-point Likert scale from completely disagree (1) to completely agree (4). A reliability analysis provided an acceptable score ($\alpha = 0.721$) for the 4 items to be combined into a single *privacy concern* scale. For this scale, higher scores indicate more concern regarding privacy in the form of feeling more concerned about privacy, privacy to be more important, having too little privacy, and believing the internet to be more of a threat to their privacy.

RESULTS

ONLINE VERSUS OFFLINE CONTEXT

The first research question concerned how the norms associated with information sharing on an SNS profile would relate to the norms associated with sharing information in an offline public or private context. Table 1 presents the respondents' responses on the norm items for all three contexts. Repeated measures ANOVA was used to test for differences in norm adherence between the three contexts. Results show that there was a significant effect of context on adherence to the norms; the critical statistical information for the analysis is provided in Appendix A. Bonferroni post-hoc comparisons showed that all means presented in Table 1 differed significantly across the three contexts with $p < .001$, except for the difference between the public and profile context for information flow others which differed with a $p = .011$.

³ This scale is also used in Chapter 3 (p.55) and from the same dataset.

⁴ This scale is also used in Chapter 4 (p.81) and from the same dataset.

Table 1. — Mean Descriptive of Responses on Norm Items.

	Private			Public			Profile		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Appropriateness	1,002	8.17	4.726	1,002	5.26	3.401	1,002	3.84	2.397
Reciprocity	861	2.58	0.714	844	2.44	0.662	816	1.79	0.677
Information Flow Self	914	1.77	0.747	912	1.97	0.766	872	2.66	0.832
Information Flow Others	914	1.67	0.725	920	2.27	0.865	867	2.41	0.848
Publicity	918	1.73	0.738	929	2.33	0.809	875	1.98	0.889

Note. Scales for Publicity, Information Flow Self, Information Flow Others, and Reciprocity was 1 (disagree completely) to 4 (agree completely). Reciprocity is the average of three items. For Appropriateness, respondents were asked about 15 topics in total.

The norms associated with the private or public context differed as would be expected. On the one hand, more topics are considered appropriate (*appropriateness*) and reciprocity (*reciprocity*) is considered more appropriate, during a private conversation with a single friend (*private context*) as opposed to having a conversation with a group of friends (*public context*). On the other hand, it is considered less suitable for the information shared in a conversation with a single friend to be shared with others later on, either by the self (*information flow self*) or by the conversation partner (*information flow others*). Similarly, it is considered less suitable for others to overhear the conversation (*Publicity*) in the private context.

When comparing the norms associated with information sharing on an SNS profile (*profile context*) with the offline public and private context, it would appear that SNSs are primarily considered to be very public places. It is considered even less appropriate to reciprocate information shared on an SNS profile, and less information is considered appropriate to share on an SNS profile compared to the offline contexts. Furthermore, sharing the information shared on an SNS profile with non-contacts by oneself or others is thought to be more suitable than the sharing of information heard in a public or private conversation. The only exception to this trend is that non-contacts who look at the information shared on the profile are considered less suitable than others who listen in on a conversation held with friends in public.

In answer to the research question, the comparison of the norms associated with sharing information on an SNS profile with both offline contexts indicate that SNS profiles are generally considered to be very public places. Even less

information is considered appropriate to share on an SNS profile than during a public offline conversation and the shared information is considered even more suitable for distributing outside of the context. *Publicity* is the only exception; although it is deemed more appropriate for non-contacts to overlook information shared on the profile than for others overhearing a private conversation, as it is deemed less appropriate compared to others who overhear a public conversation.

AGE-RELATED DIFFERENCES

The first hypothesis investigated the differences between adolescents, young adults, and adults in norm adherence within a profile context. Adolescents and young adults were expected to consider it more appropriate to share information on an SNS profile compared to adults, and to consider the information shared on an SNS profile less suitable for further distribution beyond the original context. Table 2 gives an overview of all the mean scores respondents from the various age groups scored on the informational norm items concerning the profile context.

Table 2. — *Comparison of Norm Adherence in the Profile Context between Age Groups.*

	Adolescents			Young adults			Adults		
	<i>N</i>	Mean	<i>S.D.</i>	<i>N</i>	Mean	<i>S.D.</i>	<i>N</i>	Mean	<i>S.D.</i>
Appropriateness	372	3.74	2.44	277	4.61 ^{a***}	2.63	353	3.36 ^{b***}	1.98
Reciprocity	280	1.93	.69	231	1.74 ^{a**}	.66	305	1.70 ^{a***}	.68
Information Flow Self	300	2.60	.83	248	2.80 ^{a*}	.79	324	2.61 ^{b*}	.83
Information Flow Others	302	2.31	.86	245	2.52 ^{a*}	.79	320	2.41	.85
Publicity	303	1.94	.88	248	1.93	.86	324	2.04	.91

Note. Scales for Publicity, Information Flow Self, Information Flow Others, and Reciprocity was 1 (disagree completely) to 4 (agree completely). Reciprocity is the average of three items. For Appropriateness, respondents were asked about 15 topics in total. The superscript *A* indicates that there is a significant difference between adolescents and the older categories, while the superscript *B* indicates a significant difference between young adults and adults. Reported *p*-values are based on post-hoc analysis.

* $p < .05$ ** $p < .01$ *** $p < .001$.

Exploring the norms of appropriateness, a significant age effect was found for both appropriateness, $F(2, 999) = 22.57, p < .001, \eta^2 = .04$, and reciprocity, $F(2, 813) = 10.17, p < .001, \eta^2 = .02$. Post-hoc analysis showed that young adults considered more topics to be appropriate to share on an SNS profile compared to adolescents,

and adults, the latter did not differ from each other significantly. Adolescents considered it more appropriate to reciprocate information shared on an SNS profile compared to both young adults and adults who did not differ significantly. These results support the first part of the hypothesis; adolescents and young adults consider it more appropriate to share information on an SNS profile. While young adults consider more topics appropriate to share, adolescents consider reciprocation of information to be more appropriate on an SNS profile.

Next, the norms of distribution were explored. A significant age effect was found for *information flow self*, $F(2, 869) = 5.00, p = .007, \eta^2 = .01$, *information flow others*, $F(2, 864) = 4.36, p = .013, \eta^2 = .01$, but not for *publicity*, $F(2, 872) = 1.50, p = .225, \eta^2 = .00$. Post-hoc analysis showed that young adults considered it the most suitable to tell others about what their contacts shared on an SNS profile, when compared to adolescents and adults who did not differ significantly. Similarly, young adults considered it also the most suitable for their contacts to share with others what they themselves shared on their SNS profile. This difference is only significant compared to adolescents who considered this least suitable. These results do not support the second part of the hypothesis; on the contrary, young adults considered the information shared on an SNS profile more suitable for further distribution, whereas adolescents and adults did not differ. The differences found for the norms of distribution were less significant than those for the informational norms of appropriateness.

Appendix B presents the Tables showing the public and private context, and comparison will show similar differences between the age groups concerning norms associated with the offline contexts. This suggests that the observed differences between the age groups is not specific for norms associated with SNS profiles as similar differences also exist for norms associated with the offline contexts.

NORMS AND ONLINE INFORMATION SHARING

The final research question concerned the actual relationship between the informational norms and information sharing on SNSs. Considering it to be more appropriate to share information on an SNS profile was expected to be positively related to actual information sharing, while considering the distribution of the shared information more appropriate was expected to be negatively related to actual information sharing on an SNS profile.

First, a comparison was made between the number of topics respondents deemed appropriate for sharing on an SNS profile and the number of topics respondents reported to have shared on their profiles. The latter number was obtained by combining the responses regarding the relevant topics for *post content* and *profile information* together in order to obtain a similar list of topics that was presented to respondents for *appropriateness*. On average, the respondents deemed 3.845 ($SD = 2.397$) pieces of information appropriate to share on an SNS, while reporting to have actually shared 5.284 ($SD = 3.344$) of these topics on their profile on average. Paired sample t-test shows that the figure actually disclosed is significantly more than what is deemed appropriate, $t(1001) = 13.438$, $p < .001$, $d = 0.42$. In other words, respondents generally post more information than they deem appropriate on SNSs.

Next, linear regression analysis was used to explore the relationship between the informational norms associated with an SNS profile and information sharing on SNS profiles. Respondent's *post frequency*, *post content*, and *profile information* were analysed in turn, using a stepwise procedure. In the first step, several background variables were included in the model: *age*, *gender*, *privacy concern*, and *private profile*. Age was included in the form of two dummy variables: *dummy YA* provides the difference between adolescents and young adults, and *dummy A* provides the difference between adolescents and adults. In the second step, the informational norms related to SNS profiles were added. This step allows the relationship between the informational norms associated with an SNS profile and information sharing to be determined while controlling for the variables included in step 1. Finally, in the third step the informational norms related to the public and private context were added. This made it possible to assess to what degree information sharing on SNS profiles is primarily related to informational norms associated with SNS profiles, or informational norms, in general. If the former is true, this last step should not cause a significant improvement of the model.

Table 3 gives an overview of the fit parameters of all three steps for the linear regression models. It can be seen that whereas each model was significant, only steps 1 and 2 were consistently significant improvements of the model and step 3 only provided a marginal improvement for post content. Step 2 of the model was therefore decided to give the best model, indicating that it is primarily the informational norms associated with an SNS profile which have a relationship with the actual information sharing as opposed to informational norms in general. The linear regression was done again by omitting step 3 in order to increase the number of respondents included in the analysis ($N = 696$ versus $N = 782$).

Table 3. — Fit Parameters of Step-Wise Linear Regression Models.

	Post Frequency	Post Content	Profile Information
Step 1: Control variables			
$R^2\Delta$.093***	.107***	.032***
F	14.215***	16.560***	4.599***
Step 2: Profile norms			
$R^2\Delta$.032***	.063***	.059***
F	9.801***	14.009***	6.872***
Step 3: Public & Private norms			
$R^2\Delta$.013	.027*	.015
F	5.427***	8.273***	4.019***

Note. * $p < .05$ ** $p < .01$ *** $p < .001$.

In step 1 of the models, *private profile* had a significant relationship with *post content* and *post frequency*, and *privacy concern* with *profile information* and *post frequency*. Only the significant relationship between *private profile* and *post frequency* remain after inclusion of the informational norms associated with SNS profiles in step 2. Table 4 provides an overview of the results from the final analysis. *Appropriateness*, *reciprocity*, and *information self* display a significant relationship with two or all of the indices of information sharing on an SNS profile. Further inspection of Table 4 shows that females post more frequently and they use more topics than males, and young adults post about more topics and share more profile information than adolescents, while adults post less frequently and about fewer topics compared to adolescents.

Testing the hypothesis, the results in Table 4 support the first part of the second hypothesis which states that if it is considered to be more appropriate to share information on an SNS profile then this would be positively related to actual information sharing. *Appropriateness* has a significant and positive relationship with all three indices of information sharing; respondents who consider more topics appropriate to share on an SNS profile post more frequently, about more topics, and share more profile information. Similarly, *reciprocity* has a significant positive relationship with *post frequency* and *post content*; respondents who deem reciprocity to be appropriate on an SNS profile, and they post more frequently and about more topics.

Only partial support is found for the second part of the second hypothesis which states that if the distribution of the shared information is considered to be more appropriate then this would be negatively related to actual information sharing on an SNS profile. Only for *information flow self* was a significant negative relationship found with *post frequency* and *post content*; respondents who consider it suitable for themselves to share information shared by contacts on an SNS profile with non-contacts who post less frequently and share less profile information.

Table 4. — *Predictors of Sharing Information on SNS Profile.*

	Post Frequency	Post Content	Profile Information
<i>N</i>	782	782	782
<i>R</i> ²	.129	.180	.096
<i>F</i>	11.426***	16.941***	8.192***
Gender (male=0)	.459 (.124)***	.400 (.195)*	-.152 (.159)
Age YA (Young adults =1)	-.281 (.156)	.815 (.245)**	.825 (.199)***
Age A (Adults = 1)	-.806 (.144)***	-.848 (.226)***	.362 (.184)*
Private Profile (not done=0)	.377 (.144)**	.362 (.227)	.152 (.184)
Privacy concern	.209 (.119)	-.004 (.176)	.203 (.143)
Appropriateness	.093 (.027)**	.301 (.042)***	.218 (.034)***
Reciprocity	.255 (.093)**	.437 (.147)**	.218 (.119)
Information Flow Self	-.317 (.082)***	-.098 (.128)	-.340 (.104)**
Information Flow Others	.151 (.086)	.151 (.135)	.128 (.110)
Publicity	.039 (.081)	-.075 (.127)	.020 (.103)
Constant	2.611	1.250	5.201

Note. Unstandardized coefficients with standard errors in parentheses. Profile information scored from 0 to 12 options revealed. Post Content scored from 0 to 11 topics. Post Frequency scored from 7 for *never* to 1 for *several times per day*. A higher score on privacy concern signifies more concern with privacy. * $p < .05$ ** $p < .01$ *** $p < .001$.

DISCUSSION

The goal of this study was to investigate the relationship between online informational norms and information sharing on SNSs and online privacy. The results presented in this chapter provide several insights. First of all, a comparison of the reported adherence to informational norms in a public, private, or profile context indicates that the normative expectation associated with an SNS profile is that off a public place: little information is considered appropriate to share on an SNS profile. Second, distinct differences were found in the normative expectations adolescents, young adults and adults associate with an SNS profile, primarily concerning norms of appropriateness. Third, the informational norms associated with an SNS profile showed a greater relationship with actual information sharing on SNS profiles than felt concern regarding privacy or using privacy settings. Next, these findings will be further discussed in turn.

The results indicated that SNS users are generally aware that SNSs are public spaces and have adjusted their normative expectations accordingly. SNSs even remain somewhat public when SNS users make use of the privacy settings to limit access to the information shared on their profile for contacts only, as these contacts can still include individuals from various social spheres (e.g. family, work, and friends) and strangers (Binder, Howes, & Sutcliffe, 2009; Lampinen, Tamminen, & Oulasvirta, 2009). Respondents generally indicated that only a few topics are appropriate to share on an SNS profile and that reciprocity is not appropriate. Concerning the norms of distribution, respondents appeared to make a distinction in how information shared on SNS profiles is allowed to be distributed further. While it was considered suitable for contacts to share the information with non-contacts (*information flow others*), non-contacts are not allowed to look at the shared information directly (*publicity*). Perhaps users expect that if the shared information is distributed by their contacts, this information will be better contextualized than when non-contacts look at that information directly, having little sense of the context.

Furthermore, the results showed that compared to adults, adolescents and young adults consider it more appropriate to share information on an SNS profile, although some differences between adolescents and young adults are observed. While young adults considered most topics to be appropriate for sharing on an SNS profile, adolescents thought it more appropriate to reciprocate shared information on an SNS profile than young adults and adults. In other words, the finding that adolescents share more information than adults on an SNS profile (Christofides et al., 2012; Pfeil et al., 2009) may have a reciprocal motivation in

some part. Sharing information is important for relationship development (Steijn & Schouten, 2013) and relationship development is an especially important developmental task during adolescence (see Steijn, in press). Therefore, adolescents may be more inclined to reciprocate disclosures made by friends.

Comparison of adolescents', young adults', and adults' adherence to norms of distribution showed an opposite relationship than was hypothesized; young adults considered the information shared on an SNS profile most suitable for further distribution by themselves or by their contacts. It was only for the norm *publicity* that no differences were found between the age groups. Previous studies found that younger users of SNSs considered their parents to have no business looking at their profiles (Leenes, 2012, p. 56). In 2007, boyd also identified this sentiment among the youth that parents and teachers should not visit their profiles simply because they could. Indeed, the norm *publicity* was the only norm that indicated that SNS profiles are considered to be a domain more private than a public conversation, but also still less private than a public conversation. However, with the rise of adult SNS users (Hampton, Goulet, Rainie, & Purcell, 2011), adults and teachers may now share this normative expectation with younger SNS users.

The differences between the age groups in norm adherence are not unique to the SNS profile context. The Tables in Appendix B presented similar differences between the age groups for the offline public and private context. This suggests that the rise of SNSs as a medium for interaction has not caused a difference in norm adherence between younger and older individuals. Instead, it seems likely that differences in informational norm adherence already existed in relation to offline conversations as well, but the social overlap on SNSs magnifies these differences and creates a cause for conflict. In other words, when adolescents are interacting with friends face-to-face, they will act differently than an adult who is interacting with friends, but either group generally does not experience the conversation of the other. Online, however, both adults and adolescents do interact using the same medium (e.g., SNSs) thus making the differing normative expectations all the more apparent.

The last analyses investigated the relationship between the informational norms and actual information sharing on SNS profiles. The results suggest that SNS users do not necessarily abide with the normative expectations they themselves report. Respondents generally reported to have disclosed more topics on their profile than they deemed to be appropriate. Despite this, a strong relationship was found between the informational norms and actual information disclosure. In fact, the informational norms associated with an SNS profile distinguished

themselves from the informational norms associated with the other offline contexts as serving as main predictors of the actual information sharing on SNS profiles. This suggests that SNS users have a unique set of normative expectations which they associate with SNS profiles.

While only marginal support was found for the negative relationship between the norms of distribution and actual information sharing on an SNS profile, strong support was found for the positive relationship with the norms of appropriateness and actual information sharing on an SNS profile. In keeping with the findings of Mesch and Beker (2010), respondents who found more topics appropriate to share on an SNS profile, posted more frequently and about more topics, and shared more profile information themselves. Similarly, respondents who adhere to the norm of reciprocity, post more frequently and about more topics, but they do not share more profile information. As a result, SNS users who strongly adhere to the informational norms of appropriateness, by subsequently sharing much information, appear to have less regard for their privacy than those who do not adhere to this norm. Concerning the norms of distribution, respondents who believe they have the right to share information shared on a profile (*information flow self*), post less frequently and they share less profile information. The individuals adhering to this norm will experience SNS profiles differently compared to individuals who do not adhere to this norm. This can have important privacy implication when the shared information by SNS users who do not adhere to this norm becomes distributed by those who do adhere to this norm and in so doing, a different privacy value can be assigned to the shared information.

The adherence to these norms of appropriateness proved to be better predictors of actual information sharing than the felt concern regarding privacy or whether or not they had set their profile to private. These results are in keeping with previous studies that found no relationship between concern regarding privacy and information disclosure on SNSs (Acquisti & Gross, 2006; Tufekci, 2008). Instead, the adherence to informational norms on SNSs profiles had the strongest relationship with information sharing, even when they took the architectural regulators that affect how public or private the profile is experienced (e.g., privacy settings) into account. This strongly supports the fact that norms play an important role in managing online privacy and the decision to disclose information (boyd & Marwick, 2011). When SNS users share information on their profile, they have normative expectations of whether it is appropriate to do so or not do so on an SNS profile, which is distinctly separate from their normative expectations in regard to offline interactions.

To conclude, norms regulating privacy during social interaction appear to have made the transition to SNSs. Not only do SNS users report a unique set of normative expectations that are associated with SNS profiles as compared to other contexts, but these informational norms that are associated with the SNS profile also have a strong relationship with actual information sharing on SNSs. These findings strongly suggest that there is an important role for informational norms concerning individuals behaviour on SNSs. If we take into account that the architecture of SNSs has been designed in order to share as much information as possible (Peterson, 2010), whereas the actual audience is often difficult, if not impossible, to determine (Bernstein et al., 2013), then the role norms play in safeguarding online privacy may be quite an important one and it should not be overlooked. However, we have presented differences in norm adherence between different age groups and the results obtained suggest that SNS users do not necessarily abide with the norms they report as applying to SNSs. These findings suggest that informational norms are not yet capable of safeguarding our privacy on SNSs.

LIMITATIONS AND RECOMMENDATIONS

When interpreting the results presented in this chapter, it is important to consider that while the assumption in this chapter is that informational norms influence information sharing, no causality was obtained in this study. As a result, the reported norm adherence observed here could also be a rationalization of the respondents' actual behaviour. In other words, their normative expectations associated with SNS profiles are the result of their initial behaviour when first introduced to the sites. Future studies might consider establishing the causality between the normative expectations associated with SNS profiles and actual behaviour.

Second, the norm items used in this study primarily referred to interaction with friends. This was most likely interpreted by respondents as friends from a similar age group that they belong to themselves. However, nowadays, one of the problems inherent to SNSs is that both adults and adolescents have joined the same online conversation. It would therefore be interesting to know which norms adolescents adhere to when interacting with adults and vice versa. This would subsequently provide further insights into understanding how potential misunderstandings occur between younger and older individuals.

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APPENDIX A

Table 6. — *Critical Statistical Information and Effect Sizes for Repeated Measure ANOVA.*

	Mauchly's test			Huynh-Feldt estimates			
	χ^2 (DF = 2)	<i>p</i>	ε	<i>F</i>	<i>DF</i>	<i>p</i>	η^2_{partial}
Appropriateness	98.66	.000	.89	562.79	1.8, 1230.2	.000	.45
Reciprocity	122.45	.000	.86	500.54	1.7, 1199.2	.000	.42
Information Flow Self	82.16	.000	.90	321.40	1.8, 1253,4	.000	.32
Information Flow Others	5.88	.053	.99	232.73	2.0, 1382.3	.000	.25
Publicity	36.83	.000	.95	119.68	1.9, 1325,2	.000	.15

Note. Huynh-Feldt estimates were used since the assumption of sphericity was violated according to the Mauchly's test.

APPENDIX B

Table 7. — *Comparison of Norm Adherence in the Public Context between Age Groups.*

Public context	Adolescents			Young adults			Adults		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Appropriateness	372	4.81	3.14	277	6.37 ^{a***}	3.86	353	4.85 ^{b***}	3.08
Reciprocity	289	2.62	.63	234	2.42 ^{a**}	.62	321	2.30 ^{a***}	.68
Information Flow Self	321	2.01	.79	254	2.06	.76	337	1.88 ^{b**}	.74
Information Flow Others	323	2.20	.86	262	2.20	.84	335	2.40 ^{a***b}	.87
Publicity	331	2.31	.81	262	2.33	.80	336	2.35	.82

Note. Scales for Publicity, Information Flow Self, Information Flow Others, and Reciprocity was 1 (disagree completely) to 4 (agree completely). Reciprocity is the average of three items. For Appropriateness, respondents were asked about 15 topics in total. The superscript a indicates a significant difference between adolescents and the older categories, the superscript b indicates a significant difference between young adults and adults. * $p < .05$ ** $p < .01$ *** $p < .001$.

Table 8. — *Comparison of Norm Adherence in the Private Context between Age Groups.*

Public context	Adolescents			Young adults			Adults		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Appropriateness	372	7.10	4.42	277	9.78 ^{a***}	4.94	353	8.06 ^{a*b***}	4.53
Reciprocity	295	2.77	.68	246	2.53 ^{a***}	.67	320	2.45 ^{a***}	.74
Information Flow Self	325	1.82	.78	254	1.87	.75	335	1.64 ^{a*b**}	.70
Information Flow Others	327	1.65	.73	255	1.70	.73	332	1.67	.72
Publicity	328	1.79	.77	256	1.74	.73	334	1.67	.71

Note. Scales for Publicity, Information Flow Self, Information Flow Others, and Reciprocity was 1 (disagree completely) to 4 (agree completely). Reciprocity is the average of three items. For Appropriateness, respondents were asked about 15 topics in total. The superscript a indicates a significant difference between adolescents and the older categories, the superscript b indicates a significant difference between young adults and adults. * $p < .05$ ** $p < .01$ *** $p < .001$.

CHAPTER 8

General Discussion

SUMMARY

Privacy is currently a prominent topic of both academic and societal debates. This is largely a result of the prominent position that internet has taken in our everyday lives. In particular, young people's behaviour on social network sites (SNSs) like Facebook has received a great deal of attention. Today, young people have obtained the reputation of no longer caring about their privacy. More specifically, privacy is thought to no longer hold the same value for the current young generation when compared to previous generations (e.g., Nussbaum, 2007). This reputation is supported by numerous reports: young people share great amounts of information on social network sites (Acquisti & Gross, 2006; Debatin, Lovejoy, Horn, & Hughes, 2009; Govani & Pashley, 2005), the media has provided numerous anecdotal reports of disclosures leading to personal misfortune (e.g., Ferenstein, 2013; Levy, 2009; O'Dell, 2011), and, despite this risky behaviour from a privacy perspective, young people are often found to be less concerned with privacy than older individuals (Fox et al., 2000; "Online privacy worries increase with age", 2009; Paine, Reips, Stieger, Joinson & Buchanan, 2007; Zukowski & Brown, 2007). However, on the other hand, a growing number of studies shows that young people do in fact value privacy, especially from known others such as their parents (boyd & Marwick, 2011; Livingstone, 2008; Raynes-Goldie, 2010). In this dissertation we provide further evidence that the negative reputation of young people with regard to privacy is undeserved: they do appear to value their privacy, but they manifest this in different ways than do older people.

Our primary research question was: *"To what extent does a developmental perspective contribute to our understanding of individuals' behaviour on SNSs, their privacy concerns, and their privacy protective behaviour, in particular with respect to the differences therein between adolescents, young adults, and adults?"* In discussions on the online behaviour of young people, they are often labelled in generational terms, such as "digital natives" or "millenials" (e.g., Howe & Strauss, 2000; Nussbaum, 2007; Palfrey & Gasser, 2008; Prensky, 2001). These labels not only ignore the diversity between children (Marwick, Diaz, & Palfrey, 2010), but they also overlook the developmental characteristics of this age group. In this study, we explored the feasibility of taking a developmental perspective to better understand the online behaviour and privacy concerns of individuals, to provide new insights concerning the privacy appreciation of both young and old.

Before we address our main research question and subsequent implications in more detail, we first give a summary of the preceding chapters. The chapters addressed three topics: behaviour on SNSs (Chapters 2 & 3), privacy concerns (Chapters 4 & 5), and privacy protective behaviour (Chapters 6 & 7).

BEHAVIOUR ON SNSs

In **Chapter 2**, our goal was to explore the link between self-disclosure on SNSs and relationship development. The results showed that, as a consequence of sharing information on their profile, respondents primarily reported positive relationship developments, that is, more relationships were gained than lost, and they reported liking others more and feel more engaged with others, rather than less. These relationship developments primarily took place among weak ties (i.e., acquaintances) and information shared through public posts was reported to be the primary cause of these developments. We concluded that the sharing of personal information, opinions and thoughts through public posts on SNSs, often negatively associated with a loss of privacy, is also related to a social merit: positive relationship development.

In **Chapter 3**, our goal was to explore the extent to which the adolescents', young adults', and adults' behaviour on SNSs, in the form of information disclosure, adding of contacts, and use of privacy settings, could be linked to needs for relationship and identity development that differ in these developmental life phases. The results showed that adolescents post more frequently than adults and have more contacts than both young adults and adults. Furthermore, adolescents were most likely to add contacts to get to know them. These findings appear to mirror the important role friendships play during adolescence, and the developmental need to make friends. Young adults were found to post as frequently as adolescents, but they addressed more topics in these posts and most often reported primarily using their SNS profile to socialize. This appears to mirror the change from wanting to establish new relationships during adolescence (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006) to wanting to establish more intimate and satisfying relationships during young adulthood (Erikson, 1968). Finally, adults were found to share the least information, and to more often have family as opposed to friends as contacts. This appears to mirror the fact that during adulthood less

time is spent with friends (Blieszner & Roberto, 2004, p.172; Hartup & Stevens, 1999). Less support was found for a link between the online behaviour and the need for identity development, but we concluded that a developmental perspective is a feasible approach to explore behaviour on SNSs.

In sum, these two chapters suggest a close relationship between the behaviour on SNSs and the developmental goals of the individual. In Chapter 2, we showed that information sharing on SNSs is positively related to the developmental goal of relationship development. In Chapter 3, we identified the differences in information sharing, adding contacts and motivations for using SNSs for the three age groups: adolescents, young adults and adults. More importantly, we showed how these differences appear to be closely related to the different needs for relationship and identity development depending on the life phase of the individual.

PRIVACY CONCERNS

In **Chapter 4**, our goal was to offer insights regarding the differences in adolescents', young adults', and adults' concerns for privacy by investigating their privacy conceptions. Privacy conception refers to the specific ideas of individuals about what privacy actually is. We assessed privacy conception through four aspects often associated with privacy (Burgoon, 1982; Vedder, 2011): personal information, relationships, personal space, and autonomy. The results showed that more adults associated situations involving personal information with privacy than adolescents did (e.g., the occurrence of data mining by government), but fewer adults associated situations involving relationship with privacy compared to adolescents and young adults (e.g., being able to be alone with a friend or partner). These findings appear to reflect the fact that specific potential privacy concerns—those regarding the personal information shared online—only become prominent at young adulthood, when individuals become more independent and self-sufficient (Arnett, 2000). During adolescence, individuals still live relatively sheltered lives in their parental home. The situations involving personal information were also found to have the strongest relationship with reported concern. We concluded that the lower concern regarding privacy reported by adolescents was related to differences in privacy conception. Furthermore, we concluded that the differences found in privacy conceptions between adolescents, young adults, and adults appear to be related to the developmental differences between these age groups: for adolescents the focus still lies on creating privacy from their parents rather than protecting their online data.

In **Chapter 5**, we compared the underlying mechanisms that might affect the differences in concern regarding privacy between young and old, and users and non-users of SNSs. The results showed that while the difference in concern regarding privacy between young and old is mediated through their privacy conceptions, the difference in concern between users and non-users is not. Instead, the difference in concern between users and non-users is mediated by a difference in expected risk-benefit balance as a result of sharing information on SNSs. We concluded that the differences in conception and concern observed between young and old appear to be unrelated to the use or non-use of SNSs, offering further support for using a developmental perspective to interpret the differences in privacy conceptions between young and old.

In sum, these two chapters show that the differences in concern regarding privacy between young and old are related to differences in privacy conceptions. These differences appear to be closely related to the differences in the developmental phase of young and old. In Chapter 4, we showed that adolescents, young adults, and adults hold different privacy conceptions which affect the individuals' felt concern. In Chapter 5, we then showed that while both young and old, and users and non-users differ in concern, only young and old differ in privacy conception. This lack of difference in privacy conception between users and non-users provides further support for differences in privacy conception are being age and thus development related.

PRIVACY PROTECTIVE BEHAVIOUR

In **Chapter 6**, we investigated the importance individuals attribute to various threats to privacy. We distinguished between the potential privacy threats of social conflict, identity theft, and data mining to which individuals are exposed when sharing information on SNSs. Based on similar developmental arguments provided in the previous chapters, adolescents were expected to attribute relatively more importance to protection against social conflict than young adults and adults. The results indicated that individuals appear to be focussed on avoiding the most blatant privacy violations, rather than acquiring the best possible protection. In addition, only tentative support was found for social conflict being a more prominent concern of adolescents. Remarkably, no differences were found between young and old in their attribution of importance to features protecting data mining, identity theft, or social conflict. Individuals of all ages attributed most importance to privacy protection against data mining and identity theft.

We concluded that adolescents in this respect were no different to young adults and adults, and recognize the need for protection against data mining and identity theft, even if these concerns are not yet as prominent as they are for young adults and adults.

In **Chapter 7**, we explored the role of informational norms regarding the sharing of information on SNSs. We were specifically interested in adolescents', young adults', and adults' adherence to norms of appropriateness and distribution (Nissenbaum, 2004). The results showed that the normative expectations associated with SNSs indicate these sites are considered to be primarily public places, where little information is deemed appropriate for sharing and the information that is shared on SNSs is considered suitable for further distribution. Adolescents and young adults were found to consider it more appropriate to share information on SNSs than adults, but only small differences were found concerning norms of distribution. Furthermore, the results showed that the reported adherence to the informational norms had a strong relationship with actual information sharing. However, people generally share more information than they themselves deem appropriate. We concluded that even though informational norms are likely to play an important role concerning our privacy on SNSs, the differences found in the normative expectations between young and old suggest that they are not yet capable of safeguarding privacy on SNSs.

In sum, Chapters 6 and 7 showed that adolescents, young adults, and adults do not differ in their desired privacy protection, but that they do hold different normative expectations for information shared on SNSs. Chapter 6 showed that adolescents, young adults, and adults do not differ in their attribution of importance to various privacy protection tools. Both young and old prioritize privacy protection against data mining and identity theft. Chapter 7 showed that while informational norms play an undeniable role concerning online privacy on SNSs, as yet they appear to offer little protection. Individuals generally do not adhere to their own norms, sharing more information than they would consider appropriate, and young and old differ in what they consider appropriate for sharing on SNSs.

CONCLUSION:

A DEVELOPMENTAL PERSPECTIVE ON PRIVACY APPRECIATION

The goal of this dissertation was to investigate the state of privacy appreciation of younger and older individuals in the context of SNS use. We stated the research question: *“To what extent does a developmental perspective contribute to our understanding of individuals’ behaviour on SNSs, their privacy concerns, and their privacy protective behaviour, in particular with respect to the differences therein between adolescents, young adults, and adults?”* By investigating the possible relationships between developmental factors and adolescents’ (12- to 19-year-olds), young adults’ (20- to 30-year-olds), and adults’ (31-year-olds and older) behaviour on SNSs, their privacy concerns, and their privacy protective behaviour, we hoped to explore the feasibility of taking a developmental perspective to understand online behaviour and privacy concerns. Although we provide no conclusive evidence, the findings reported in the previous chapters provide strong support for a developmental perspective being able to contribute to our understanding of individuals’ behaviour on SNSs, their privacy concerns, and their privacy protective behaviour to a significant extent.

We were especially interested in the developmental needs of relationship and identity development. In Chapter 2, we verified the role SNSs play in relationships developments. Over half of the respondents reported having experienced a relationship development as a consequence of sharing information on SNSs and the majority of these developments were positive. Furthermore, in Chapter 3, we demonstrated that socializing is an important reason for many people to make use of SNSs. The need for identity development was not often reported as a primary reason for using an SNS profile. Previous studies, however, have shown that SNSs are likely to be used by individuals to experiment with their identity (Lenhart, Rainie, & Lewis, 2001; Subrahmanyam, Smahel, & Greenfield, 2006; Valkenburg & Peter, 2008; Valkenburg, Schouten, & Peter, 2005).

During adolescence, the need to experiment with identity and develop relationships is at its peak (Boneva et al., 2006, p. 618; Brown, 1990; Erikson, 1959; Peter & Valkenburg, 2011). Much time is spent with friends, during which adolescents like to disclose information about themselves (Boneva et al., 2006; Brown, 1990). In Chapter 3, we found that this mirrored the findings that adolescents frequently post on their profile, have many contacts who are primarily friends, and are most likely to add contacts to get to know them. In addition, adolescents are more likely to report peer pressure as a primary reason for using their profile compared to young adults and adults. This finding is in keeping with results from

previous studies (e.g., Walrave, Vanwesenbeeck, & Heirman, 2012) and further emphasizes the influence of peers at that age: adolescents need to have a profile on an SNS or they could miss out on the online interactions between friends (Raynes-Goldie, 2010).

As they still live at their parents' homes, adolescents need to constantly manage their privacy from their parents to be able to hang around with friends (boyd & Marwick, 2011). This fact was reflected in Chapters 4 and 5, as relatively more adolescents than young adults and adults conceptualized privacy in terms of relationships. Furthermore, this difference in privacy conception to some extent explains the lower concern regarding privacy often found among young people. In Chapter 6, we established further tentative support that social conflict is the most prominent concern and most often occurring negative occurrence for adolescents. These differences were not statistically significant due to of the low number of respondents reporting any concerns or negative experiences at all. Remarkably however, the results in Chapter 6 also showed that adolescents attribute most importance to privacy protection from identity theft and data mining, similar to young adults and adults. This appears to indicate that adolescents are aware of the need for privacy protection from data mining and identity theft, even if these are not their most prominent concerns. Finally, in Chapter 7, we demonstrated that adolescents adhere most to the norm of reciprocity (i.e., to share information in a conversation similar to what their peers have shared). This could, once again, be related to the important position of peers for adolescents, who therefore seek to reciprocate their behaviour.

The need for identity development persists during young adulthood (Arnett, 2006), but the adolescent need to develop new relationships declines. Instead, young adults seek more intimate and satisfying relationships (Erikson, 1986). In Chapter 3, we showed that young adults post as frequently as adolescents, but they address more topics in their posts, and most young adults primarily use their profile to socialize with others. In addition, young adults were also found to make most use of the privacy settings. This was hypothesized to be related to the fact that young adults have the greatest need to keep their online and offline identities separate in their search for employment: employer checks of applicants' online profiles are becoming an increasing concern ("Réseaux sociaux: comment réagissent les recruteurs face à un détail gênant sur un candidat?", 2013).

During young adulthood, individuals become more self-sufficient and more independent: they seek employment, they leave their parental homes, and some even decide to settle down to start families. This transitory phase, from adoles-

cent to adult, is reflected in their privacy conceptions, presented in Chapters 4 and 5. They associated situations involving relationships with privacy similar to adolescents, but also situations involving personal information, similar to adults. The concern regarding privacy reported by young adults was also similar to that of adults, in keeping with findings from previous studies (Hoofnagle, King, Li, & Turow, 2010; Madden & Smith, 2010; Tufekci, 2012). In Chapter 7, we note that young adults consider more topics appropriate for sharing than adolescents and adults, in keeping with the fact that they also actually address more topics in their online posts. However, they do not appear to rely on norms of distribution to safeguard the information they disclosed on their SNS profile from being shared with non-contacts; we discovered that they make the greatest use of the privacy settings.

For adults, the time spent with friends declines (Blieszner & Roberto, 2004; Hartup & Stevens, 1999) and so does the need to experiment with their identity or to present themselves favourably (Leary, 1995; Waterman, 1982). In Chapter 3, this was reflected in the finding that adults share the least information on their SNS profile and have the fewest contacts. In other words, they are the least active users of SNSs which is reflected in the fact that adults are most likely to report adding contacts after a request was made. Furthermore, more adults report that they primarily have family as contacts, rather than friends. This seems to be in keeping with the fact that the time spent with friends declines during adulthood: adults may use SNSs to stay in touch with their family.

In Chapters 4 and 5 we reported that data collection by governments is more prominently associated with privacy by adults than adolescents. Adults also conceptualize privacy more in terms of burglary and the freedom to vote. These situations play a greater role in the lives of adults than they do in the relatively sheltered lives of adolescents, where parents take care of most issues. In addition, we found that it is exactly these situations that are the greatest cause for concern, providing a possible explanation for the higher concern often found among older individuals. In addition, having more freedom than adolescents to meet with others and create privacy (adolescents are bound by rules imposed by their parents; boyd & Marwick, 2011), adults are less likely to associate situations involving relationships with privacy. In further support of this, we found that more adults than adolescents are concerned about the misuse of their information in Chapter 6. Finally in keeping with the fact that adults share the least information on their profile, we reported in Chapter 7 that they also consider the least information as being appropriate for sharing.

Overall the findings presented in these chapters show that individuals' behaviour on SNSs and their privacy concerns appear, to a great extent, to be related to the developmental life phase of the individual. Most of the differences reported in these studies between adolescents', young adults', and adults' behaviour and privacy concerns appear to be directly related to developmental differences between these life phases.

We found less support for a link between individuals' privacy protective behaviour and developmental factors. We found no differences in the importance adolescents, young adults, and adults attribute to privacy protection from social conflict, identity theft, or data mining, whereas from a developmental perspective, we expected adolescents to attribute more importance to privacy protection against social conflict. We also only found small differences in the norms of distribution, whereas we expected adolescents to be more opposed to the distribution of the information shared on a profile than adults. This appears to mirror the increasing awareness in society of the importance of privacy protection online, and suggests that the privacy protective behaviour of individuals is most influential. In other words, even if we are not able to change the fact that adolescents will always share personal information online with many, relatively unknown, contacts and the concern of what subsequently happens with this information online will remain less prominent for adolescents, we may, nonetheless, be able to influence them to protect their online information. We will go into more detail concerning this issue later on.

We hope however that we have convinced the reader of the feasibility of using a developmental perspective to understand online behaviour and privacy concerns. Alternative explanations are possible for all of the findings, but the developmental perspective appears to be the only one that covers the entire picture. The next step should be to test this hypothesis in more detail. Longitudinal analysis will be necessary to provide conclusive evidence of the relationship between developmental factors and online behaviour and privacy concerns. Before going into more detail concerning the recommendations for future studies, however, we will first discuss some implications of the findings presented in the previous chapters, and the feasibility of using a developmental perspective.

THEORETICAL IMPLICATIONS

In the following section we discuss the implications of the findings presented in this dissertation for the theoretical debate concerning privacy. Several important implications can be identified concerning the general framework from which individuals' online behaviour, their privacy concerns, and their privacy protective behaviour should be addressed. First, we describe the most important implications for using a developmental perspective to interpret online behaviour. Second, we emphasize the importance of further studying the privacy conceptions of individuals. Third, we take a closer look at how individuals' privacy protective behaviour appears to mirror the increased societal privacy awareness.

A DEVELOPMENTAL PERSPECTIVE

In this dissertation, we have provided support for taking a developmental perspective to understand online behaviour and privacy concerns and the differences therein between adolescents, young adults, and adults. In Chapter 3, we reported that this perspective can offer a natural explanation for why SNSs are more popular among adolescents and young adults than for adults, and why adolescents and young adults share more information online. In Chapter 4, we showed that development-related differences in privacy conception appear to be related to why adults generally report more concern about their privacy, and in Chapter 5, we showed that these differences in privacy conception appear to be unrelated to SNS use. We therefore argued that neither the differences in concern nor in conception need necessarily imply a reduced privacy appreciation among young people, as is sometimes assumed (e.g., Nussbaum, 2007; Johnson, 2010). Yes, the privacy appreciation of young people and old people is different, but not because adults appreciate privacy and adolescents do not. Instead, it should be concluded that both adults and adolescents appreciate their privacy, but they do so differently.

The current state of privacy appreciation in society and the differences between young and old is not necessarily much different from the state of privacy appreciation before the introduction of social media in society. Instead of having caused the differences in privacy appreciation observed today, social media, and the internet as a whole, may have magnified existing differences by moving our personal information and social interaction to a much more public platform. Indeed, the behaviour of young people on these sites is remarkably similar to ordinary socializing—sharing personal information and making friends—that

they always exhibited in the school yard (boyd, 2008; Herring, 2008; Marwick et al., 2010). In other areas, such similarities between online and offline life have also been found. Consider for example the fact that victims of cyber-bullying are generally victims of offline bullying as well (Casas, Del Rey, & Ortega-Ruiz, 2013, p. 581) and it is generally the individuals with strong social skills who also have most online friends, while those with poor social skills benefit less from SNSs (Jin, 2013; Valkenburg & Peter, 2007). This strongly suggests the idea that young people share more information with friends online, simply because they also share more information with friends offline as well. However, while young people's behaviours and social interactions used to be 'hidden' on the playing field at school, on the internet they are accessible by almost anyone at any time.

This means that rather than seeing the adolescents of today as a new generation with new ideas about privacy (Nussbaum, 2007; Palfrey & Gasser, 2008), we should approach adolescents as individuals who are going through a vulnerable developmental life phase in the current informational society. During adolescence individuals have strong social incentives to use SNSs, leaving them vulnerable to potential privacy risks as a result of data mining processes, which are not yet prominent concerns at that age. As a result, we can perhaps assume that regardless of the level of attention and awareness given to certain threats of online privacy, adolescents will never fully equal adults in their behaviour and privacy conceptions. Their behaviour and privacy conceptions may simply be an inherent part of their developmental life phase. However, this also suggests that adolescents' behaviour and concerns will develop as they grow older. This hypothesis is significantly different from expectations that would be associated with a generational label. The latter suggests that certain behaviours or concerns are persistent characteristics of individuals which remain stable as they grow older and which have changed in regard to previous generations, while the former emphasizes the temporal vulnerability of individuals during adolescence in the light of new societal developments (e.g., the rapid rise of informational technologies); as they grow older so too can their behaviour and concerns be expected to 'mature'.

The idea of adolescence being a vulnerable maturation period and therefore in need of special attention is not new. Adolescent' behaviour is already regulated on several levels, under the notion of adolescents not yet being sufficiently mature. For example, adolescents are limited in the degree to which they are allowed to drive or drink. This is to some extent based on the fact that adolescents are generally not expected to be able to make the same rational and considered choices and decisions as adults do when assessing risks. People, both young and

old, are generally limited by bounded rationality (Calo, 2012; Grimmelmann, 2009); a lack of motivation, time, or knowledge often prevents us from making fully rational decisions. However, research also shows that the adolescent brain is insufficiently physically mature yet for proper risk decision-making and that adolescents are more focussed on rewards rather than risks, especially in the presence of peers (Furby, & Beyth-Marom, 1992; O'Brien, Albert, Chein, & Steinberg, 2011; Steinberg, 2008). This is also likely to affect their ability to manage their online privacy, especially on SNSs where peers are always nearby.

Consequently, individuals may need special attention and protection concerning their privacy during adolescence. We go into more detail concerning the regulation of privacy when discussing the practical implications of our findings.

PRIVACY CONCEPTIONS

An important finding put forward in this dissertation is that young people and old people hold different privacy conceptions focussing on different privacy situations. Furthermore, we demonstrated that a strong relationship exists between the privacy conception of an individual and his or her concern regarding privacy. Most studies investigating privacy have generally focussed on the availability of personal information online (e.g. Fox et al, 2000; Hoofnagle, et al., 2010; Madden & Smith, 2010; Zukowski & Brown, 2007), but we reported that this is not the most prominent privacy appreciation for young people. In Chapter 4, we showed that for adolescents, the effect privacy violations may have on relationships is more prominent. For adults, the potential privacy risks of data mining become more relevant, while young adults appear to be in a transitory phase concerning their privacy conceptions, and consider both data mining and relationships to be prominent privacy situations (see Chapters 4 and 5).

Not taking these differences between young and old into account when discussing privacy can lead to misinterpretations of online behaviour. For example, potential privacy violations through data mining processes that take place online are especially prominent for adults. As a result, they are more likely to associate sharing information online with a loss of privacy. For adolescents, instead, sharing information online may be a way to create privacy. By sharing information on SNSs with friends, adolescents are able to create privacy from their parents, whom constant supervision in the parental home is an important concern during adolescence (Chapter 4, boyd & Marwick, 2011). In other words, only from an adult's perspective of privacy is our privacy at greater risk in present day society

since the appearance of the internet and social media. As a result, the difference in privacy conceptions that we demonstrated offer a potential explanation for why young people are often found to be less concerned compared to adults (Fox et al., 2000; “Online privacy worries increase with age”, 2009; Paine et al., 2007; Zukowski & Brown, 2007), without this lower concern suggesting that they consider privacy less important. This perspective would be entirely lost if the differences in privacy conceptions are ignored and the privacy debates only focusses on the privacy risks of data mining.

Altman made a similar point in 1977, he showed that while the need for privacy is universal, cultures (or societies) differ in how they obtain that privacy. He argued that other cultures, which from a western perspective appear to have a complete lack of privacy needs, actually do have these needs but achieve them in different ways. For example, Javanese families have little physical privacy, but maintain privacy through social and emotional restraint, while Balinese families live physically secluded lives through high walls and fences but are open and warm in their interactions (Altman, 1977). He therefore warned for a ‘western’ interpretation of privacy when looking at different cultures.

We warn against taking an ‘adult’ interpretation of privacy when considering the behaviour observed on SNSs. Adolescents, young adults, and adults each hold different privacy conceptions and other concerns become more prominent depending on their life phase. Similar to how Javanese families appear to have no desire for privacy from a ‘western’ perspective, an adult’s perspective hinders the understanding of adolescents’ need for privacy. When taking the differences between young and old into consideration it becomes easy to see that they put great effort to create the privacy most prominent to them (see for example, boyd & Marwick, 2011, p. 14; Lampinen, Tamminen & Oulasvirta, 2009; Stutzman & Hartzog, 2009).

We have provided support for the fact that privacy conceptions not only differ among cultures, but also differ across age. When discussing privacy or online behaviour of young people or adults, we should be careful to do so from the appropriate perspective. For example, in 2013, Livingstone, Kirwil, Ponte, and Staksrud found that less than 1% of the children (9-16) in their sample brought up the risks of sharing personal information when asked to describe their concerns with the internet. Livingstone and colleagues argue that headlines on ‘stranger danger’ and privacy in the news are primarily adult concerns not shared by children: instead most children reported to be concerned about exposure to undesired content (e.g., pornographic or violent content). Similarly, we have shown in Chapters 4 and 5 that within privacy, adolescents, young adults, and adults do

not consider the same concerns to be most prominent, and in Chapter 6 we provided further tentative support that adolescents hold different concerns from young adults and adults. Taking the divergences in privacy conceptions between young and old into account will improve our understanding of individuals' privacy appreciation and why they share the information online that they do.

PRIVACY PROTECTIVE BEHAVIOUR

Ever since the introduction of SNSs almost a decade ago, societal awareness concerning the privacy risks of sharing information online has increased. In addition, technological deficiencies have been addressed since the social media's infant years and the privacy settings provided by SNSs have become more user-friendly and subsequently more often used (Peter & Valkenburg, 2011). These changes are also reflected in the use of privacy settings by individuals reported in studies. This is particularly the case for young adults. In early studies from when SNSs were new and still primarily aimed at students, young adults were generally found to make little use of privacy settings (e.g. Acquisti & Gross, 2006; Govani & Pashley, 2005). However, more recent studies provide a different picture. In 2010, Madden and Smith concluded that young adults (18- to 29-year-olds) more actively manage their online information on social media, including adjusting their privacy settings, than do adults (30-year-old and older). Similarly, boyd and Hargittai (2010) showed that 18- to 19-year-olds made increasing use of privacy settings between 2008 and 2009. In addition, Dimock, Doherty, Tyson, and Gewurz recently showed that young adults were more concerned with data surveillance by governments than adults (2013).

Our results concerning the privacy protective behaviour of individuals appear in keeping with these latter results. We showed in Chapter 3 that more young adults reported using the privacy settings than adolescents and adults. In fact, 86.3% of all respondents indicated to have, at the least, limited the access to their profile to contacts only. In Chapter 6, we found that young adults and adults, but even adolescents, attribute similar importance to privacy protection against the potential risks of identity theft and data mining. Finally, in Chapter 7, our findings showed that adolescents, young adults, and adults generally consider SNS profiles to be public rather than private places in terms of their normative expectations. We did not find evidence that adolescents might have an expectation that shared information on SNS should be considered private, as reported boyd & Marwick (2011). Adolescents and young adults considered more information

appropriate for sharing on their profile compared to adults, and young adults even considered it more suitable for shared information to be distributed to non-contacts. In sum, these findings suggest that our respondents do not rely on informational norms to keep their online information private. Instead, our respondents reported to make use of the privacy settings and reported to consider privacy protection against the potential risks of identity theft and data mining important.

As such, our data concerning the privacy protective behaviour did not show clear links with developmental factors but rather appears to mirror the increased societal awareness of the public nature of SNSs and necessity for privacy protection. Despite the increased societal awareness concerning the status of online privacy, internet users generally still lack the tools or agency to protect their online information from data mining processes. While several alternatives are available to protect online information from known others (e.g., using multiple profiles; boyd & Marwick, 2011, p. 14; Lampinen et al., 2009; Stutzman & Hartzog, 2009), users still do not always have a real choice regarding whether or not they want to accept cookies when visiting a website, nor do they have a clear view on what is done with their information¹, and even their choice of which SNS to use is not necessarily entirely free as it is dependent on where the individual's existing social network is (see Chapter 6). In addition, we argued in Chapter 6 that most individuals appear to have a strategy that is focussed on avoiding the most obvious privacy violations rather than achieving perfect privacy protection. As a result, users are likely to expose themselves to privacy risks every time they share information online, even though our results in Chapter 6 suggest that both young and old consider the availability of tools to protect their online information to be important.

It should not be forgotten that young users impose these vulnerabilities on themselves primarily because they want to obtain the social benefits these sites have to offer. For example, if they do not have an SNS profile, they will miss out on part of the social interaction between their friends (Raynes-Goldie, 2010). The internet is rapidly becoming an integral part of everyday life, with numerous activities like banking, shopping, and reading the news taking place on the internet. Yet, all information shared online makes individuals vulnerable to numerous privacy risks which can have serious long term consequences, for example, de-contextualized information shared online and found years later by future employers (e.g., “Réseaux sociaux : comment réagissent les recruteurs face à un détail gênant sur un candidat?”, 2013), while young adults generally expect a division between work and personal life even on social media (Abril, Levin, & Del Riego, 2012).

¹ The latter is partially a consequence of the inefficiency of current privacy notices (van Alsenoy, Kosta, & Dumortier, 2013; Calo, 2012).

Ultimately, to obtain the benefits SNSs offer, individuals need to share information, making themselves vulnerable for privacy violations (Lampe, Ellison, & Steinfield, 2007; Taddicken & Jers, 2011). Ironically, it is the same affordance of digital information that makes SNSs popular among youth that also creates the privacy vulnerabilities. Digital information, when compared with physical or verbal information, is automatically recorded and stored, searchable, easily copied, and therefore has the potential to be seen by many people (boyd, 2010). Because of these affordances, young people believe that they are more in control of their online presence, while in the long term they essentially lose control of their information and thus privacy (Peter & Valkenburg, 2011). Similarly, we found in Chapter 2 that the public posts on SNSs, which are generally associated with privacy risks, are also closely related with positive relationship development, an important developmental need during adolescence. This explains to some extent the popularity of SNSs among adolescents, despite the privacy risks associated with its public nature.

This also demonstrates the double-sided nature of SNSs. On the one hand, they offer important social merits to their users, but on the other hand, they also expose users to numerous risks, several of which are related to privacy. This symbiotic relationship should be kept in mind when studying one or the other. It should be our challenge to find ways in which we can preserve (desirable) online behaviour while also preserving privacy.

PRACTICAL IMPLICATIONS

The findings presented in this dissertation and their theoretical implications, as outlined in the previous section, have considerable practical implications regarding various efforts undertaken to regulate privacy. In this section, we discuss some of the implications of our findings in relation to legal, technological, and societal efforts to regulate privacy. We use the word regulation here in the broadest sense, meaning that we look at the ways in which we can influence or steer the behaviour of individuals. We look at how the law can be used to regulate the protection of privacy against online data processes, but we also assess the role technology can play in this regard. Finally, we briefly discuss how the online privacy protective behaviour of individuals could be influenced from within society, bottom-up.

LEGAL REGULATION

The more detailed legislative framework dealing with privacy issues, focusses on data protection. On a global scale, two approaches regarding the regulatory focus in legislative initiatives can be distinguished: rights-based regulation and harm-based regulation (Moerel, 2014). In the European Union, data protection is generally based on a principle of rights-based regulation. This form of regulation focusses on protecting personal data and privacy from a perspective of human rights and the freedom of individuals. That is, individuals are supposed to be free in their choices and thus when it comes to protecting their personal data: in control of their own data. Examples of provisions that illustrate this rights-based perspective are the requirement for companies to obtain informed consent for collected data and to provide transparency of the data processes through, for example, privacy notices. Both are aimed at allowing individuals to make informed decisions concerning their data (van Alsenoy, Kosta, & Dumortier, 2013; de Hert & Gutwirth, 2006; Koops, 2013). In contrast, in the United States data protection is based on a principle of harm-based regulation. This perspective focusses on protecting data by sanctioning transgressions of fair practices. That is, companies are essentially free to collect data, as long as they abide to certain limitations of what is acceptable. Market-mechanisms are generally relied to determine which processes are acceptable or not. Examples of harm-based regulation are an obligation for companies to notify the public when the data they collected has been breached (i.e., when credit card numbers of customers are hacked), and the establishment of fair information practices to which companies need to comply (Moerel, 2014).

Both perspectives on data protection legislation and regulation have important up and downsides. Harm-based regulation is generally very effective when applied, but is often too specific and therefore only covers a limited section of all data processes that occur online. Right-based regulation, on the other hand, is more widely applicable, but results in a large number of obligations for companies and organisations that process personal data and, more importantly, too many responsibilities and decisions to be made by individuals (Moerel, 2014). An important critique against right-based regulation, therefore, is that it assumes that individuals make fully rational decisions based on their general interest when deciding about their online privacy. However, as already mentioned, individuals are limited in the time they have available to make such choices and usually lack sufficient knowledge and motivation to be able to make qualitatively good and rational decisions (Calo, 2012; Grimmelmann, 2009). As a result, the sheer number

of decisions individuals have to make, for example they have to agree to terms and conditions and decide whether or not to accept cookies on almost every websites, causes each individual decision to become less meaningful as individuals resort to simple acceptance. In Chapter 6, we also showed that rather than aiming for the optimal privacy protection, individuals appear to settle for what appears 'good enough'. Most privacy violations however, do not always have directly apparent consequences making it difficult to determine when privacy protection is 'good enough'.

Adolescents are especially at risk of making 'irrational' decisions from the perspective of data protection. We previously argued that adolescence should be considered as a vulnerable developmental life phase from a privacy perspective and that adolescents seem ill-equipped to handle the responsibility of managing their own personal information. We argued that they have strong developmental motives to make use of online services such as SNSs and share information online (see Chapter 3). Yet, the possible privacy threats in the forms of collection of their personal data do not feature prominently in adolescents' privacy conception (see Chapter 4 and 5). In other words, they do not yet share the same concerns as young adults and adults. However, it is precisely these privacy concerns regarding their personal information which are relevant to making decisions regarding the acceptance of certain data processes in return for access to certain online services (e.g., SNSs) or other short term rewards (e.g., discounts).

The awareness that young people are in need of special privacy protection has recently become a more prominent issue on the agenda of international policymakers. For example, the latest proposal of the European Commission for the new General Data Protection Regulation (proposed GDPR) provides children with a special status (2012). Article 29 of the proposition specifically states that "children deserve specific protection of their personal data, as they may be less aware of risks, consequences, safeguards and their rights in relation to the processing of personal data" (proposed GDPR, 2012, p. 22). In practice, this generally results in access restriction or parental consent. For example, in the United States, the 1998 Children's Online Privacy Protection Act (COPPA) states that the data of children younger than 13 years of age should not be collected unless consent has been given by parents. In practice, this can result in online platforms, for example Facebook, simply refusing access to children younger than 13 years of age because gaining this form of consent, as required by the Children's Online Privacy Protection Rule (FTC, 2012), is difficult.

One difficulty currently encountered by this form of regulation is the fact that there is no good way of checking an individual's identity online. In other words, age-based restrictions online with the intention to protect children are ineffective simply because children or adolescents circumvent them by lying about their age, in which they may even be assisted by their parents (boyd, Hargittai, Schultz, & Palfrey, 2010; Fiveash, 2013). Whether or not the loss of anonymity and moving to improved forms of identification on the internet is desirable or not is a different discussion altogether which we will not address here². Even if age-verification improves, these solutions would either restrict adolescents from learning how to cope with the internet and from the social merits the internet holds for them (boyd, 2013) or result in children and adolescents becoming more dependent on their parents for their online access, while it is often their parents they want to create privacy from in the first place (see Chapter 4; boyd & Marwick, 2011).

Instead, we believe the solution may be found in moving towards a more harm-based approach to protecting young people's online data. One way to approach this would be to designate certain online platforms which are often frequented by children or adolescents as privacy safe havens. In other words, regulation would then focus on limiting what data collectors are allowed to do and placing limits on data collection and processing specifically for online platforms that are known to be visited by young people. This form of regulation should be applied to web platforms that target a young audience, such as game-sites, sites based on children's television shows, or fan-sites of popular musicians, as well as other sites that do not specifically target a young audience, but are known to be popular among the youth (e.g., Facebook). This approach would avoid the difficulty of having to identify individuals online in order to offer protection to young people. Instead, it would provide additional privacy protection at websites where young people are expected to hang-out. In addition, making use of this harm-based approach would move a great deal of the responsibility away from the individual users towards policymakers and regulators. This is where this responsibility should lie, according to Moerel (2014, p. 49). She makes this proposition in her argument against the "meaningless consent" individuals need to give for cookies, but similarly it would offer additional protection to young users at websites they are known to visit. As a result, the burden of proof would shift from individual users having to show that they had taken the right steps to protect their data, towards the data processors of online platforms often frequented by young people who then would have to show that they had taken adequate steps to protect their users' online data.

² In his discussion of privacy rights for minors, Walrave briefly mentions some of the advantages and disadvantages of online anonymity (2005, p.18). He argues that it will ultimately be about balancing the necessity of identification and the protection of privacy and lists several options to accomplish this.

Currently, no reasonable expectation of privacy appears to exist online. The notion of a reasonable expectation of privacy originates from *Katz v. United States* in which it was stated that, “My understanding of the rule that has emerged from prior decisions is that there is a twofold requirement, first that a person have exhibited an actual (subjective) expectation of privacy and, second, that the expectation be one that society is prepared to recognize as ‘reasonable’” (1967). As such, a reasonable expectation of privacy is based on a personal expectation of privacy and a societal interpretation of this expectation to be reasonable. The information shared on the internet is recorded, stored, processed and widely accessible if no steps are undertaken to prevent this (boyd, 2008). As a result, the expectation of maintaining any privacy online is often considered unreasonable. However, that all our information and data can be processed on the internet does not necessarily mean that all our information and data should be processed. Having a camera follow us as soon as we leave the house would be seen as an intrusion of our privacy, yet this seems to be accepted on the internet. If we can have a reasonable expectation of privacy in public (Blok, 2002, p. 62), it should be possible to implement this to the internet as well.

One problem with the reasonable expectation doctrine is that it is often used as a descriptive standard (McGill & Kerr, 2012). In other words, if camera surveillance would increase, the expectation of being able to move around in public without being recorded will become less reasonable. The pitfall lies in the fact that, as new technologies that invade privacy become more common (e.g. flying drones fitted with cameras), expectations of privacy will be considered less reasonable. Indeed, the notion of a reasonable expectation is currently considered to lead to less privacy protection and is even used to legitimize certain privacy-invasive measures (Nouwt, de Vries, van der Burgt, 2005, p. 127; Nouwt, de Vries, & Loermans, 2005, p. 356).

In other words, regulation from a harm-based perspective would require a normative discussion of what data processes should be deemed reasonable in our society. This discussion should be the responsibility of policymakers and regulators rather than being left to individuals to determine on each visit (see also, Moerel, 2014, p. 49). Young people should be able to have a reasonable expectation of privacy when visiting websites that are specifically intended for them. Policymakers and regulators will need to establish which data processes should be deemed acceptable and desirable on websites often frequented by young people and enforce these rules with the data processors. This would be similar to how certain sensitive information, such as financial holdings or medical

information, has acquired a special status of protection (Nissenbaum, 2004; p. 111), however, rather than protecting a specific group of information, we would be protecting a specific group of vulnerable individuals: children and adolescents.

TECHNOLOGICAL REGULATION

Technological regulation can be used to facilitate the effect of legislation. Technological regulation of privacy occurs by designing new technologies in such a way as to have built-in privacy protection. This concept is known as privacy by design and is currently receiving increasing attention (e.g., Hoepman, 2012). Privacy by design is based on the assumption that new technologies are inherently neutral: they can be used to intrude on individuals' privacy, but they can also be used to protect their privacy through privacy enhancing technologies (PETs; Cavoukian, 2009). The central idea is to implement PETs too enhance the overall design without weakening the system's performance (Cavoukian, 2009). When correctly implemented, privacy-invasive features of a technology can be turned into privacy-protective ones.

As such, PETs can be designed in order to support existing legal regulations. For example, in keeping with legal right-based regulation, PETs could offer more control to individuals over their own personal information. Personal data vaults are a good example of a PET and have been in development the longest (Cavoukian & Green, 2012). The basic idea of personal data vaults is that individuals can collect their own personal data in such a way that they are in control of this data and who has access to it. This would level the playing field for individuals, which is now dominated by organizations that often collect and process data without their knowledge.

However, PETs could also be employed to make technology privacy friendlier regardless of the content of data protection laws. An important and relatively easy step to make towards better data protection could lie in changing the default settings. Generally there are two possibilities, either the default is set so that data processing occurs and users need to actively opt-out if they do not want this, or the default is set so that data processing is not allowed and users need to actively opt-in to acquire the associate services.

The status of the default is important, as users are unlikely to change the default settings (boyd & Hargittai, 2010; Mackay, 1991). Just changing the default options to initially allow only the data processes that are necessary for a site to function could therefore have a strong effect on data protection (Moerel, 2014,

p. 49). Individuals would have their data protected initially, but also with the freedom to agree to more data processes in return for additional benefits. This change would also turn data processors' practices from hiding the 'off' button, towards promoting the 'on' button for additional data processes.

From this default, it is easy to imagine how extra protection could be offered to adolescents. Several 'on' buttons for certain data processes could be disabled until the user come of age. Once again, the feasibility of this depends on whether or not becoming more identifiable online is in fact desirable, which is likely to some extent to depend on whether reliable and safe methods for, for example, age verification are developed. However, even without this possibility, the change in default to opt-in will offer better protection to internet users of all ages compared to the default opt-out situation. In light of this, the recent change of Facebook to allow adolescents to post public posts appears ill-advised ("Teens now start with "friends" privacy for new accounts", 2013). Previously 12- to 17-year-olds were not allowed to post public messages on Facebook- ignoring the fact that a "friends of friends" post can become very public as well (Constine, 2013). This policy allowed adolescents to use Facebook to interact with friends and explore public life, while providing some protection for their privacy by default. Now, 12- to 17-year-olds will need to opt-out on public posts like everyone else. Instead, in keeping with what we proposed in the previous section, it might be better to disable certain data processes completely on websites. Depending on which data processes we deem undesirable to occur with the information of young people, PETs could be developed which make it impossible for these processes to occur on online platforms targeted at young people.

Once again, we believe an important role seems to be reserved for the government in relation to the development of PETs. Whereas an industry exists for security technologies (e.g., surveillance cameras), there is no such industry for PETs. Governments could take a leading role in promoting this industry. In addition, governments could provide international standards for privacy to which technologies should comply. This would be no different from safety standards that have been formulated for all kind of products such as machinery or food. These privacy standards could describe the requirements that new information technologies have to comply with, or what the default status for 'allowed' data processes should be. At the same time, these standards would address one of the challenges identified by Spiekerman for PbD (2012): they will provide an agreed upon methodology for the systematic implementation of privacy into new technologies. If these standards are developed taking the differences in behaviour

and motivations between individuals from different life phases into account, this would be a huge step forward towards safeguarding individuals' privacy online.

SOCIETAL INITIATIVES

In addition to legal and technological efforts to regulate and protect peoples' online privacy, societal efforts take place to regulate our privacy behaviour, bottom-up. Educational programmes are important tools for accomplishing this. A report from the European Commission on Protecting Children in the Digital World (2011) states that programmes concerning media literacy and awareness-raising have been included in the curricula of most European countries, and numerous privacy awareness programmes are in existence (e.g., see Cavoukian, 2009, p. 333) such as the programme Teenangels (see teenangels.org). However, the actual implementation of these programmes remains fragmented and inconsistent. In addition, a recent Dutch report from the Royal Netherlands Academy of Arts and Sciences (2012) showed that education surrounding informational technology in the Netherlands is still based on content from 1995, and is in dire need of being brought up-to-date to the current technological status of society. In other words, although attention is being paid to educational programmes, there is plenty of room for improvement.

Based on our findings, education aimed at explaining the tools available for privacy protection and how to use them may be more effective than education based on risk awareness or avoidance. The findings presented in this dissertation show that while adolescents appear to have strong motives for participating online and that they do not share the same concerns as young adults and adults, the privacy protective behaviour of individuals is not necessarily related to the developmental life phase of the individual. In other words, even though data collection by a government is not a prominent concern of adolescents, they did appear to be aware of the importance of having privacy protection against data collection (see Chapter 6).

These findings mirror the increasing awareness in society of the importance of online privacy protection and suggest that the privacy protective behaviour of individuals is more open to influence than their online behaviour or privacy concerns. It may prove difficult to stop adolescents from sharing much personal information with many, not always well-known, online contacts and adolescents may never become as concerned as adults about what happens with their shared

online information as these aspects may be integral to their developmental life phase. However, we may still be able to influence their use of privacy settings and other tools to protect their online privacy. Previous studies have shown that individuals generally have little knowledge concerning the actual protection of their data (e.g. Hoofnagle et al., 2010). Subsequently, the primary focus in educational programmes should not be on the online risks related to information sharing in the hope that people will modify their behaviour, but rather focus on the available tools and how they should be used.

In addition, educational programmes should not only aim at online privacy risks and technological tools for privacy protection, but also at online etiquette (see also Mitchell, Wolak, & Finkelhor, 2008; p. 292, who make this point concerning blogging). Some privacy risks may never become as prominent to adolescents as they are to adults. Instead, adolescents will also need to know what is appropriate to share and under what circumstances, and what should and should not be done with other people's information. In Chapter 7, we showed that adherence to such informational norms has a clear relationship with the actual sharing of SNSs.

The increasing number of adults making use of SNSs (Hampton, Goulet, Rainie, & Purcell, 2011) suggests that adolescents, young adults, and adults will benefit from these programmes. Adolescence is a privacy vulnerable period as described previously, but adults also need to hear about the privacy risks and how they should manage their privacy. Furthermore, adults also need to learn how to deal with the access they have to the adolescent life that unfolds before them online. The news that SNSs become less popular among young people when more adults make use of these sites should therefore be unsurprising but worrisome (van Grove, 2013; "Ouders 'verjagen' kinderen van Facebook", 2013). Adolescents will look for new places to go, which have not yet been discovered by their parents³. Parents need to understand that their children also desire private space online.

RECOMMENDATIONS FOR FUTURE STUDIES

This dissertation contributes to the ongoing privacy debate in light of the rapid online developments. We have shown that a developmental perspective can offer a viable contribution to our understanding of privacy appreciation in everyday society. This dissertation does not offer conclusive evidence of the validity of a developmental perspective, rather we provide a comprehensive overview of individuals', both young and old, behaviour on SNSs, privacy concerns,

³ Currently, snapchat appears to become the latest fad among young people. Snapchat allows users to share photo's which become deleted after a certain time decided by the sender (e.g., 5 seconds or an hour). It will be interesting to see whether this app >

and privacy protective behaviour, and we have shown the connections with differences in the developmental life phase.

The developmental perspective presented here offers a strong alternative to the generational perspective as insinuated by the many generational labels given to young people (e.g., “digital natives” or “millennials”: Howe & Strauss, 2000; Nussbaum, 2007; Palfrey & Gasser, 2008; Prensky, 2001). Ultimately, however, it is likely that both generational and developmental factors affect online behaviour and that these factors could even interact. For example, Bontekoning describes that how individuals in a certain life phase address issues that are especially relevant in that life phase, is for some part dependent on the time in history that these individuals live and the related options and opportunities that are available (2007, p. 84-87). This is particularly relevant in light of the rapid developments of (informational) technologies in previous decades. The internet has given young people today access to possibilities that were unthinkable for the young people of previous generations. As a result, the technologies available today are bound to have an influence on young people as a generation. However, we should not forget, as we have shown in this dissertation, that their behaviour will ultimately also be partially dependent on their developmental life phase and the associated needs and desires. It is important to distinguish between generational characteristics and developmental characteristics: the former can be expected to persist as individuals grows older, whereas the latter can be expected to change when individuals grows older.

This dissertation provides a first step towards showing the feasibility of using a developmental perspective to help understand online behaviour and privacy concerns. The cross sectional research, presented here does not allow a reliable distinction between developmental and generational effects (Bolton et al., 2013). The next step should therefore be to conduct longitudinal analysis, in order to further investigate whether the observations we have made are developmental or generational characteristics.

We recommend that researchers set up longitudinal designs to further explore online behaviour and privacy concerns. The goal of these studies can be twofold. First of all, longitudinal approaches can investigate whether certain characteristics, such as the privacy conceptions, remain constant over time (i.e. supporting a generational explanation) or whether they develop as individuals grow older (i.e. supporting a developmental explanation). Secondly, they could attempt to identify major inflection points during development. For example, our results suggest that the online behaviour and conception is, at least for some part,

< will develop into a new Facebook, or whether young people will abandon it when the next best thing is developed.

related to whether the individual still lives at the parental home or not. From this point on, it could be expected that privacy protection from the parents becomes a less prominent need. A longitudinal design could examine whether leaving the parental home, or going to college have an impact on the online behaviour or privacy concerns. Alternatively, different demographical characteristics such as social class or education, individualistic characteristics, such as neuroticism and extraversion (e.g., Hughes, Rowe, Batey, & Lee, 2012; Quercia, Lambiotte, Stillwell, Mosinski, & Cowcroft, 2012), or individual differences in knowledge of legal online privacy knowledge (Hoofnagle et al., 2010) can lead to different online behaviour and different concerns. Such characteristics can, therefore, help to understand the entire developmental process.

The questionnaire used for this dissertation was designed to obtain a broad view of online behaviour on SNSs and related privacy concerns. Therefore, a number of variables like the felt concern for privacy were addressed through relatively simple scales with few items. This was necessary to avoid overwhelming respondents, given the large number of topics addressed in the questionnaire. We recommend conducting future studies that focus on a specific topic, using stronger in-depth scales to address the variables investigated and that build on the broad overview presented in this dissertation.

For example, future researchers are invited to take a closer look at the relationships between online behaviour and developmental goals shown in Chapter 3. The exact role of developmental goals became clearer at a later stadium of the project. As a result, our questionnaires did not include any measures that directly assessed developmental goals. A number of questionnaires are available which allow the assessment of developmental goals such as identity development, for example, the “Ego Identity Process Questionnaire” or the “Extended Objective Measure of Ego Identity Status II” (Balistreri, Busch-Rossnagel, & Geisinger, 1995; Schwartz, 2004). Future studies could include these measurements in their designs enabling direct analysis of the relationship between developmental goals and behaviour on SNSs or other social media.

Similarly, the findings we present concerning the privacy conceptions require further attention. We have shown in both Chapters 4 and 5 that the privacy conception of an individual, that is, what privacy exactly entails for that person, affects his or her felt concern regarding privacy. We assessed privacy conceptions based on 4 aspects of privacy previously identified: personal space, relationships, autonomy, and personal information (Burgoon, 1982; Burgoon et al., 1989; Vedder, 2011). Although the scales used have strong face validity, no further validation

of the scales was done. Researchers are invited to look at individuals' privacy conceptions in more detail and possibly improve the scales for more effective assessment of these privacy conceptions. Longitudinal analysis could be used to verify the suggested causal relationship between privacy conceptions and the reported concern and other attitudes. In addition, since privacy conceptions are likely to differ between cultures (Altman, 1977), it would be interesting to see whether the findings presented here can be replicated in a non-Dutch sample.

Finally, we recommend that in future studies, researchers pay more attention to the proper definition of age groups, specifically those investigating young adults. Most academic studies focus exclusively on students as the young adult age group (e.g. Acquisti & Gross, 2006), other studies focus on individuals older than 18 years of age, comparing young adults with adults (e.g. Hoofnagle et al., 2010; Madden & Smith, 2010), while other studies that include adolescents often no longer distinguish between young adults and adults (e.g. Christofides, Muise, & Desmarais, 2012; Walrave et al., 2012). In discussions on young people, it is not always clear whether they concern children, adolescents, young adults, or all of them. Yet, our results show that young adulthood appears to be an important and interesting developmental phase with distinct behavioural patterns and concerns, and should therefore be distinguished more consistently from both adolescence and adulthood.

Young adults have received far less attention than adolescents in developmental theories, and are sometimes referred to as emerging adulthood (see Arnett, 2000, 2006). The need to distinguish an additional developmental phase between adolescence and adulthood is relatively new and culturally specific (Arnett, 2000). During young adulthood, individuals gradually enter adult life and take leave of the parental home, find employment, marry, and become (financially) independent (Arnett, 2006; Carroll et al., 2009). Due to the many societal changes taking place during this life phase, young adulthood as a developmental phase is in its very nature heterogeneous, making it a difficult developmental phase to define (also see Arnett, 2006, p. 15).

More time and attention should be spent on trying to understand the developmental life phase from adolescence to adulthood. Young adulthood should not be simply considered as a transitory phase from adolescence to adulthood. Instead, young adulthood should be considered to be an important and independent developmental phase during which many personal and societal changes occur. As such, better attention and better identification of young adulthood as a developmental life phase can advance the understanding of online behaviour,

and the maturation process from an adolescent's privacy appreciation into an adult's privacy appreciation.

CONCLUDING REMARK

When we started this dissertation in 2010, young people had a bad reputation concerning privacy, but while working on this dissertation, awareness appears to have grown that young people actually do care about privacy. While most headlines used to claim that young people did not care about privacy (and some headlines still do; e.g., Hyde, 2007; Malcolm, 2013; Nussbaum, 2007), currently an increasing number of news report instead pose the question, "do young people care about privacy?" (e.g., Henley, 2013; Stanley, 2013; "The generation that's grown up posting their lives wants something unexpected: privacy", 2013). This changed attitude in the media is in keeping with the increasing number of studies conducted in previous years that argue that young people do in fact care about their privacy. This notion is also supported by the findings presented in the chapters of this dissertation. Our findings show that yes, young people do care about their privacy; however, their sense of privacy is still developing.

In this dissertation, we have provided strong support for the concept that a developmental perspective can significantly contribute to our understanding of individuals' behaviour on SNSs, their privacy concerns, and their privacy protective behaviour. We are not the only ones who want to emphasize the fact that young people behave the way they do simply because they are young (e.g., boyd, 2014), but we are the first to present a comprehensive analysis of the online behaviour and related privacy concerns of adolescents, young adults, and adults from a developmental perspective.

The most important conclusion drawn from the findings presented here is that both young people and old people value their privacy, but they do so differently. Claims that privacy is becoming less important based on observed online behaviour, like the one made by the CEO of Facebook (Johnson, 2010), can well turn into a self-fulfilling prophecy. Adolescents, young adults, and adults all have social motives for making use of SNSs or other online services. The fact that they make use of these services despite the availability of proper tools to protect their online information does not mean that privacy is not important to them. Instead, policymakers and regulators should pay considerable attention to maintaining privacy in society by providing users with the necessary means to protect their online data.

This moment in history is an important moment in time for the development of privacy regulation. Awareness concerning the need for additional privacy protection appears to be at its peak among both the public and policymakers, especially since the revelations made by Edward Snowden regarding the level of surveillance we are subjected to by certain bodies like the NSA. Effective regulation of online privacy will require an exact understanding of the motives for information sharing and the concerns held by individuals. For example, policymakers and regulators will need to take into account that adolescents have different motivations for sharing information online and different privacy concerns than do adults. These differences suggest that adolescents in particular are vulnerable from a privacy perspective. During adolescence, individuals have strong social motives for sharing information online with friends and become vulnerable to 'adult' risks, such as data mining by the government, which are not yet prominent concerns during adolescence.

The developmental perspective discussed in this dissertation can contribute to our understanding of online behaviour and privacy concerns and, subsequently, this knowledge can support the development of effective regulation. An important difficulty policymakers and regulators face is the fast pace at which new technologies develop. Indeed, the ways in which new technologies will change society or behaviour is not always predictable. However, taking a developmental perspective could provide insights into how new technologies are going to be used and how young and old will differ in their use. In other words, to be effective, regulation of data protection should not focus on regulating the technology as it can change. Instead, regulators should use the different motivations individuals have for sharing information online and which privacy concerns are most prominent as a starting point for developing effective regulation. When the young people of today have grown up to become responsible adults, a new generation of adolescents are likely to make enthusiastic use of the then latest and trendiest information and communication technologies. It is likely that similar differences to those we have described will be seen between those adolescents and adults. Even though the technologies will have changed and with them the exact behaviour manifested by the different age groups, the underlying developmental needs and desires of individuals that use them will likely remain the same.

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DUTCH SUMMARY

Samenvatting



INLEIDING

Privacy is een actueel onderwerp in academische en sociale discussies. Dit is het gevolg van de groeiende rol die het internet speelt in het alledaagse leven. Nu online diensten steeds vaker gebruikt worden, is de privacy van onze informatie kwetsbaarder geworden. Denk hierbij aan gerichte reclame, cookies die ons online gedrag registreren, data mining, en mogelijke identiteitsdiefstal (Andrews, 2012; Noda, 2009; Roosendaal, 2012; Roosendaal, 2013; Timmer, 2009). In dit proefschrift richten wij ons op het gedrag en de bijbehorende privacy vraagstukken van één specifieke online dienst die op het moment zeer populair is: sociale netwerk sites (SNSs).

Sociale netwerk sites (SNSs), zoals Facebook en Hyves, hebben een belangrijke plaats ingenomen in het leven van veel mensen. Neem bijvoorbeeld Facebook waar al meer dan één biljoen mensen gebruik van maken. Oorspronkelijk was Facebook alleen op studenten gericht, maar nu maken mensen van alle leeftijden er gebruik van (Hampton, Goulet, Rainie, & Purcell, 2011; Lenhart, Purcell, Smith, & Zickuhr, 2010). Wij hebben er daarom voor gekozen de huidige staat van privacy beleving te onderzoeken vanuit de context van SNSs. Wij zijn hierbij in het bijzonder geïnteresseerd in de verschillen in gedrag en zorgen over privacy tussen jong en oud.

Van de jongeren van vandaag wordt vaak gezegd dat ze minder om hun privacy geven dan voorgaande generaties (e.g., Nussbaum, 2007). Er zijn inderdaad meerdere bevindingen gepubliceerd die suggereren dat jongeren minder om hun privacy zijn gaan geven. Daarnaast delen jongeren veel informatie met hun contacten op SNSs, zonder altijd de privacy opties te gebruiken om deze informatie te beschermen (Acquisti & Gross, 2006; Debatin, Lovejoy, Horn, & Hughes, 2009; Govani & Pashley, 2005). Ook in de media zijn veel nieuwsberichten te vinden over privacy gerelateerde incidenten en de heftige gevolgen die deze kunnen hebben voor de betrokken jongeren (e.g., Ferenstein, 2013; Levy, 2009; O'Dell, 2011). Verder wordt vaak gerapporteerd dat jongeren minder bezorgd zijn over hun privacy vergeleken met ouderen. Dit terwijl de privacy van jongeren extra kwetsbaar is door hun online gedrag (Fox et al., 2000; "Online privacy worries increase with age", 2009; Paine, Reips, Stieger, Joinson & Buchanan, 2007; Zukowski & Brown, 2007). Toch staan deze bevindingen in schril contrast met een groeiend veld van studies dat claimt dat jongeren wel degelijk hun privacy waarderen (boyd & Marwick, 2011; Livingstone, 2008; Raynes-Goldie, 2010).

In dit proefschrift onderzoeken wij de verschillen tussen jong en oud in online gedrag en zorgen over privacy, om meer inzicht te krijgen in de privacy beleving van zowel jongeren als ouderen. Het idee dat jongeren minder om privacy zouden geven, lijkt veelal impliciet op een generatie argument te berusten. De gerapporteerde verschillen tussen jong en oud zouden verschillen tussen een jongere en een oudere generatie zijn. In plaats daarvan benaderen wij de verschillen tussen jong en oud benaderen vanuit een ontwikkelingsperspectief (Christofides, Muise, & Desmarais, 2012; Peter & Valkenburg, 2011; Subrahmanyam, Smahel, & Greenfield, 2006). Wij verwachten dat de verschillen tussen jong en oud, in hun gedrag en zorgen over privacy, ontstaan omdat ze in een andere ontwikkelingsfase zitten en daarom andere sociale behoeften hebben. Dit proefschrift zal geen uitsluitsel geven tussen het generationele- en ontwikkelingsargument. In plaats daarvan is het doel om de plausibiliteit van het ontwikkelingsperspectief aan te tonen, om zo bij te dragen aan het privacy debat met nieuwe inzichten om toekomstige onderzoekers een handvat te bieden om dit perspectief verder te onderzoeken.

Het is belangrijk dat we een onderscheid kunnen maken in verschillen tussen jong en oud van een generationele aard en van een ontwikkelingsaard. Tegenwoordig wordt de focus al snel gericht op generatieverschillen door stempels als “digital natives” (digitaal aangeborene) of “millenials” (e.g., Howe & Strauss, 2000; Nussbaum, 2007; Palfrey & Gasser, 2008; Prensky, 2001). Dit soort stempels houdt geen rekening met de diversiteit die bestaat tussen jongeren onderling (Marwick, Diaz, & Palfrey, 2010) en de ontwikkelingskarakteristieken van deze leeftijdsgroep. Daarom willen wij juist de mogelijke relatie verkennen tussen ontwikkelingsbehoeften van individuen en hun gedrag op SNSs en mogelijke zorgen over privacy. Een belangrijke contributie in dit proefschrift is dat wij zowel adolescenten (12 tot 19 jaar oud), jong volwassenen (20 tot 30 jaar oud), en volwassenen (31 jaar oud en ouder) in onze analyse hebben opgenomen. Onze hoofd onderzoeksvraag luidt daarom als volgt: *“In welke mate kan een ontwikkelingsperspectief bijdragen aan ons begrip van mensen hun gedrag op SNSs, hun zorgen over privacy, en hun gedrag om privacy te beschermen, met name in relatie tot de verschillen hierin tussen adolescenten, jong volwassenen, en volwassenen?”*

Vanuit een ontwikkelingsperspectief gaat men er van uit dat het geobserveerde gedrag op SNSs typerend is voor individuen van een bepaalde leeftijd en offline sociale ontwikkeling reflecteert (Christofides et al., 2012, p. 49; Subrahmanyam et al., 2006). Dit suggereert dat het gedrag dat adolescenten vandaag de dag op SNSs vertonen heel waarschijnlijk gelijkenissen heeft met hoe adolescenten zich

vroeger offline gedroegen (Herring, 2008, p. 77; Marwick et al., 2010, p. 4; Mesch & Talmud, 2010); het komt voort uit dezelfde sociale behoeftes, alleen is het gedrag nu online. Wij hebben ons hier voornamelijk gericht op de sociale behoeftes van relatie en identiteit ontwikkeling, omdat deze behoeftes het sterkst gerelateerd lijken te zijn aan het gedrag dat op SNSs plaats vindt (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; boyd, 2008; Ellison, Steinfield, & Lampe, 2007; Lampe, Ellison, & Steinfield, 2006; Madden & Smith, 2010; Marwick et al., 2010; Nadkarni, & Hofmann, 2012; Peter & Valkenburg, 2011; Regan & Steeves, 2010; Steijn & Schouten, 2013).

In dit proefschrift behandelen wij drie aspecten van de privacybeleving van individuen vanuit een ontwikkelingsperspectief: het gedrag op SNSs, de zorgen over privacy, en het gedrag om privacy te beschermen. In hoofdstuk 2 en 3 onderzoeken wij of het gedrag van een individu op SNSs gerelateerd is aan de karakteristieken behorende bij de levensfase van adolescentie, jong volwassenheid, en volwassenheid. In hoofdstuk 4 en 5 onderzoeken wij of het ontwikkelingsperspectief een alternatieve interpretatie kan bieden voor de lagere bezorgdheid over privacy van jongeren (Fox et al., 2000; “Online privacy worries increase with age”, 2009; Paine et al., 2007; Zukowski & Brown, 2007). Hiervoor introduceren wij privacy concepties: ‘het specifieke idee van wat privacy precies is.’ Wij verwachten dat de privacy conceptie van een individu voor een deel afhangt van de ontwikkelingsfase waarin hij of zij zit. In hoofdstuk 6 en 7 onderzoeken wij hoe individuen hun privacy online beschermen. Wij richten ons op de vormen van privacy bescherming die individuen van verschillende leeftijden belangrijk vinden en de rol van informationele normen in het beheer van privacy online.

SAMENVATTING VAN DE BEVINDINGEN

GEDRAG OP SNSs

In **Hoofdstuk 2** was het doel de connectie tussen het delen van informatie op SNSs en relatie ontwikkeling te onderzoeken. Het delen van informatie is een belangrijk aspect van relatie ontwikkelingen. Het delen van informatie op SNSs is voornamelijk met positieve relationele ontwikkelingen geassocieerd onder studenten (Hsu, Wang, & Tai, 2011; Ledbetter, et al., 2011; Park, Jin, & Annie Jin, 2011; Sheldon, 2009). Ons onderzoek draagt bij aan deze eerdere bevindingen omdat wij respondenten van 12 tot 83 jaar oud onderzochten. De resultaten lieten zien dat respondenten over het algemeen vooral positieve relatie ontwikkelingen

rapporteerden als gevolg van het delen van informatie op SNSs. Deze ontwikkelingen werden vaker gerapporteerd voor relaties met zogenaamde ‘weak ties’ (i.e., kennissen) dan voor relaties met ‘strong ties’ (i.e. goede vrienden of familie). Het waren voornamelijk de publieke posts op SNSs die werden aangewezen als de oorzaak van deze (positieve) relatie ontwikkelingen. Alles bij elkaar genomen, suggereren deze resultaten dat het delen van persoonlijke informatie en gedachten via SNSs een duidelijk sociaal voordeel oplevert: positieve relatie ontwikkelingen.

In **Hoofdstuk 3** was het doel te onderzoeken in welke mate het gedrag op SNSs gekoppeld kan worden aan de behoeftes voor relatie en identiteit ontwikkeling van adolescenten, jong volwassenen, en volwassenen. Wij hebben het gedrag gemeten aan de hand van de gedeelde informatie, toegevoegde contacten, en het gebruik van de privacy opties. Op deze manier hebben wij een breed beeld kunnen vormen van het gedrag van individuen op SNSs en de verschillen hierin tussen jong en oud. De resultaten lieten zien dat adolescenten vaker berichten plaatsen op SNSs dan volwassenen, meer contacten hebben, en dat adolescenten vaker contacten toevoegen om ze te leren kennen. Deze bevindingen reflecteren de belangrijke rol die vriendschappen spelen tijdens adolescentie en de verhoogde behoefte in deze levens fase om nieuwe vriendschappen te vormen (Boneva et al., 2006; Brown, 1990). Jong volwassenen plaatsen even vaak nieuwe berichten, maar posten over meer onderwerpen vergeleken met adolescenten, en gebruiken SNSs het meest om te socializen. Deze bevindingen lijken de overgang van de behoefte om nieuwe relaties te willen vormen tijdens adolescentie, naar het willen ontwikkelen van intiemere relaties tijdens jong volwassenheid te reflecteren (Erikson, 1968). Volwassenen deelden het minst informatie op SNSs en hadden vaker vooral familie als contacten in plaats van vrienden. Dit is in lijn met het feit dat volwassenen minder tijd met vrienden doorbrengen (Blieszner & Roberto, 2004, p. 172; Hartup & Stevens, 1999).

Wij vonden minder bewijs voor een relatie tussen het gedrag op SNSs en de behoefte voor identiteit ontwikkeling. Wel vonden we dat jong volwassenen het meest gebruik maken van de privacy opties op SNSs. Dit zou gerelateerd kunnen zijn aan het feit dat jong volwassenen de grootste behoefte hebben om hun online en offline identiteit gescheiden te houden tijdens hun zoektocht naar werk: werkgevers zoeken steeds vaker naar het online profiel van sollicitanten (“Réseaux sociaux: comment réagissent les recruteurs face à un détail gênant sur un candidat?”, 2013). Op basis van de resultaten concludeerde wij dat een ontwikkelingsperspectief een plausibele verklaring biedt voor de verschillen in gedrag op SNSs tussen jong en oud.

ZORGEN OVER PRIVACY

In Hoofdstuk 4 was ons doel inzicht te krijgen in de verschillen in zorgen over privacy tussen adolescenten, jong volwassenen, en volwassenen. Dit deden wij door hun privacy concepties te verkennen die verwacht werden te verschillen tussen de verschillende ontwikkelingsfasen. Deze verschillen in privacy concepties zouden vervolgens gerelateerd kunnen zijn aan de geobserveerde verschillen in zorgen over privacy. Privacy concepties werden gemeten aan de hand van vier aspecten die vaak geassocieerd worden met privacy: persoonlijke informatie, relaties, persoonlijke ruimte, en autonomie (Burgoon, 1982; Vedder, 2011). De resultaten lieten zien dat adolescenten privacy minder vaak associeerde met situaties over persoonlijke informatie (e.g., de regering die data over mij verzamelt), maar dat volwassenen privacy minder vaak associeerde met situaties over relaties (e.g. het alleen kunnen zijn met een partner of vriend).

Deze bevindingen suggereren dat sommige zorgen over privacy, die over de persoonlijke informatie online, pas tijdens jong volwassenheid prominenter worden. Jong volwassenheid kan worden gezien als een overgangsfase, van adolescentie naar volwassenheid, waarin individuen zelfvoorzienend en zelfstandiger worden (Arnett, 2006). Dit kan ook teruggevonden worden in hun privacy concepties: jong volwassenen associëren zowel situaties over relaties met privacy, net zoals adolescenten, als situaties over informatie met privacy, net zoals volwassenen. Tijdens adolescentie leven jongeren nog een relatief beschut leven in het ouderlijk huis waarbij hun ouders nog veel zaken regelen. Daardoor moeten ze echter wel vaak nog hun privacy managen in relatie tot hun ouders om met hun vrienden te kunnen zijn (boyd & Marwick, 2011). Volwassenen hebben hierin meer vrijheid en zullen daarom minder snel situaties met betrekking tot relaties met privacy associëren.

Situaties met betrekking tot persoonlijke informatie hadden de sterkste relatie met de gerapporteerde zorgen over privacy. Adolescenten maakten zich minder zorgen over privacy dan jong volwassenen en volwassenen, en jong volwassenen waren even bezorgd over privacy als volwassenen, in overeenstemming met voorgaande studies (Hoofnagle, King, Li, & Turow, 2010; Madden & Smith, 2010; Tufekci, 2012). Op basis van deze resultaten concludeerden wij dat de verschillen in privacy concepties tussen jong en oud inderdaad met verschillen in ontwikkelingsfase te maken lijken te hebben. Verder concludeerden wij dat deze verschillen in privacy concepties ook de verschillen in zorgen over privacy kunnen helpen verklaren.

In **Hoofdstuk 5** vergeleken we de onderliggende factoren voor de verschillen in zorgen over privacy tussen jong en oud en gebruikers en niet gebruikers van SNSs. Het doel was om een alternatieve verklaring te weerleggen voor de verschillen in privacy conceptie tussen jong en oud. Namelijk, dat dit verschil het gevolg is van het feit dat jongeren intensievere gebruikers van SNSs zijn. De resultaten lieten zien dat het verschil in zorgen over privacy tussen jong en oud inderdaad was gerelateerd aan de verschillen in privacy conceptie, waar dit niet het geval was voor de verschillen tussen gebruikers en niet gebruikers. Deze waren in plaats daarvan gerelateerd aan een verschil in de verwachte risico's en voordelen van het gebruik van SNSs. Deze resultaten suggereren dat de verschillen in privacy conceptie tussen jong en oud onafhankelijk zijn van het gebruik of niet gebruik van SNSs en geven daarmee verdere ondersteuning om deze verschillen vanuit een ontwikkelingsperspectief te benaderen.

GEDRAG OM PRIVACY TE BESCHERMEN

In **Hoofdstuk 6** was het doel uit te vinden hoeveel belang individuen hechten aan de bescherming tegen verschillende privacy risico's. Er werd onderscheid gemaakt in drie soorten privacy risico's: sociaal conflict (met bijvoorbeeld familie of vrienden), identiteitsdiefstal (door vreemden), en data verzameling (door bedrijven of de regering). Wij maakten gebruik van een choice-based conjoint analysis (Curry, 1996; Orme, 1996) om het relatieve belang te kunnen bepalen. Adolescenten werden verwacht om meer belang te hechten aan privacy bescherming tegen sociaal conflict dan jong volwassenen en volwassenen. De resultaten lieten zien dat men er over het algemeen op uit is om de ergste privacy schendingen te voorkomen, in plaats van het krijgen van de beste privacy bescherming in het algemeen. Opvallend genoeg werden er geen verschillen gevonden in hoe jong en oud belang toekennen aan privacy bescherming voor de drie privacy risico's. Alle respondenten kenden het meeste belang toe aan privacy bescherming tegen data verzameling en identiteitsdiefstal. Deze resultaten suggereren dat hoewel sommige privacy risico's nog niet zo prominent zijn voor adolescenten, zij al wel het belang inzien van het zichzelf daartegen te kunnen beschermen.

In **Hoofdstuk 7** wilden wij de rol van informationele normen met betrekking tot het delen van informatie op SNSs verkennen. Informationele normen staan bekend om de belangrijke rol die ze spelen in het managen van privacy grenzen (Johnson, 1989; Moore, 1984; Nissenbaum, 2010; Stein & Shand, 1974), toch is er nog geen eerdere studie geweest die de rol van deze normen heeft onderzocht

in relatie tot SNSs. Hier vergeleken wij hoe adolescenten, jong volwassenen, en volwassenen over de norm van verspreiding en de norm van toepasselijkheid denken. Deze normen zijn overgenomen van Nissenbaum (2004): de norm van toepasselijkheid gaat over hoe toepasselijk het is om bepaalde informatie in een context te delen, en de norm van verspreiding gaat over of gedeelde informatie in een gesprek vervolgens met anderen mag worden gedeeld. De resultaten lieten zien dat de normatieve verwachtingen op SNSs lijken op die van een openbare plek: weinig informatie wordt als toepasselijk gezien om te delen en de informatie die gedeeld wordt mag verder verspreid worden. Volwassenen vinden het minder toepasselijk om informatie te delen op SNSs. Er werden maar kleine verschillen tussen jong en oud gevonden voor de norm van verspreiding. De resultaten lieten verder zien dat informationele normen een sterke relatie hebben met het daadwerkelijk delen van informatie. Mensen delen echter wel meer informatie dan ze zelf toepasselijk vinden. Wij concludeerden dat hoewel informationele normen een belangrijke rol kunnen spelen voor onze privacy op SNSs, ze op het moment nog geen echte bescherming kunnen bieden vanwege de verschillende normatieve verwachtingen tussen jong en oud en het feit dat mensen meer delen dan ze zelf toepasselijk vinden.

CONCLUSIE

De bevindingen in dit proefschrift laten zien dat een ontwikkelingsperspectief kan bijdragen aan ons begrip van het gedrag van mensen op SNSs, hun zorgen over privacy, hun gedrag om privacy te beschermen en de verschillen hierin tussen adolescenten, jong volwassenen, en volwassenen. We zijn ons ervan bewust dat wij geen definitief bewijs hebben geleverd voor de relatie tussen ontwikkelingsfactoren en het online gedrag en de zorgen over privacy. Er zijn dan ook alternatieve verklaringen mogelijk voor onze bevindingen, maar het ontwikkelingsperspectief lijkt het enigste te zijn dat alle geobserveerde verschillen kan verklaren. De volgende stap zou nu moeten zijn extra bewijs aan te voeren voor het ontwikkelingsperspectief. Longitudinale studies zullen nodig zijn om definitief bewijs te leveren voor de relatie tussen ontwikkelingsfactoren en online gedrag en zorgen over privacy. De bevindingen hier leveren in ieder geval al sterke ondersteuning aan de plausibiliteit voor het benaderen van online gedrag en de zorgen over privacy van zowel jong als oud vanuit een ontwikkelingsperspectief.

Een implicatie van het ontwikkelingsperspectief, is dat de adolescenten van vandaag niet moeten worden gezien als een generatie voor wie privacy een andere betekenis heeft gekregen nu het internet een grote rol in ons leven is

gaan spelen, maar zij moeten worden benaderd als een ontwikkelingsgroep die extra kwetsbaar is vanuit een privacy perspectief. Het internet biedt mogelijkheden die juist voor adolescenten nauw aansluiten bij hun ontwikkelingsbehoeften, terwijl de (informationale) privacy risico's, die geassocieerd worden met het delen van informatie online, nog niet heel prominent zijn voor adolescenten. Daarom moeten er vanuit een legaal, technologisch en maatschappelijk oogpunt stappen worden ondernomen om de privacy van (jonge) mensen te beschermen. Het is hierbij vooral belangrijk dat er rekening mee wordt gehouden dat jongeren anders over privacy denken dan ouderen en dat sommige risico's die voor volwassenen als vanzelfsprekend worden gezien niet perse heel prominent zijn voor jongeren. De privacy bescherming voor jongeren zal dus anders moeten worden aangepakt dan die voor ouderen. De bevindingen hier hebben laten zien dat alleen het gedrag om privacy te beschermen niet gerelateerd is aan ontwikkelingsbehoeften, maar in plaats daarvan het groeiende maatschappelijke besef lijkt te reflecteren dat privacy bescherming noodzakelijk is. Voorlichting initiatieven moeten daarom niet alleen gericht zijn op het vermijden van het internet of het benadrukken van de risico's, maar juist op de beschikbaarheid van middelen om privacy te beschermen en hoe deze te gebruiken.

Het is belangrijk om nu stappen te ondernemen om de privacy van zowel jong als oud goed te kunnen waarborgen en hierbij uit te gaan van de verschillende motivaties die jong en oud hebben om informatie online te delen. Wij voorspellen dat soortgelijke verschillen zullen blijven bestaan tussen jong en oud. Wanneer de adolescenten van vandaag zijn opgegroeid tot verantwoordelijke volwassenen, zal een nieuwe generatie adolescenten zich aandienen die enthousiast gebruik zullen maken van de dan hipste en nieuwste informatie en communicatie technologieën. Al zal de technologie en daarmee het exacte gedrag dat daar plaats vindt veranderd zijn, de onderliggende ontwikkelingsbehoeften van degenen die er gebruik van maken zullen waarschijnlijk nog hetzelfde zijn.

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ACKNOWLEDGEMENTS

Dankwoord

Ik ben zeer blij, maar ook dankbaar, dat het mij is gelukt dit proefschrift af te maken en nu in zijn huidige vorm te kunnen presenteren. Het schrijven van een proefschrift is zwaar werk en het was mij niet gelukt zonder de hulp en aanmoediging van anderen in mijn omgeving. Ik wil daarom dit moment gebruiken om mijn dank uit te spreken.

Allereerst wil ik al mijn collega's van TILT bedanken voor het creëren van een leuke en inspirerende omgeving om in te werken. Ondanks hun eigen drukke programma waren ze altijd bereid om te helpen, of om even bij te kletsen.

Speciale dank gaat uit naar mijn promotor en dagelijkse begeleider, Anton Vedder. Dankzij jou ben ik de afgelopen jaren zowel op professioneel als op persoonlijke vlak sterk gegroeid. Bedankt voor de steun in de afgelopen vier jaar en het kritische, maar ook behulpzame, commentaar dat je voor al mijn stukken hebt aangeleverd. Zonder jou was het proefschrift nooit geworden wat het nu is.

Verder wil ik Corien Prins bedanken voor haar kritische analyse van mijn proefschrift toen deze vorm begon te krijgen. Ook wil ik Alexander Schouten bedanken voor de belangrijke feedback die hij heeft gegeven voor al mijn artikelen.

Mijn dank gaat ook uit naar de overige leden van de commissie: prof. dr. P. Nikken, prof. dr. M. Walrave, prof. dr. R.E. Leenes, en prof. dr. P.J.A. de Hert. Bedankt dat jullie mijn proefschrift kritisch hebben willen doorlezen en mij met zowel de sterke punten als de zwakke punten hebben geconfronteerd.

Ik bedank ook alle andere personen die mij in de afgelopen jaren hebben geholpen, waarvan ik er hier een paar speciaal wil noemen. Hervé Tijssen voor de extra ondersteuning tijdens een moeilijke periode. Tim de Beer, en alle andere personen bij TNS-NIPO, voor de hulp tijdens data verzameling. Eva van Kruchten die me hielp met data verwerking en analyses tijdens een kritische periode in mijn promotie traject. Ineke Kouwenhoven voor het willen doornemen van mijn Nederlandse samenvatting. Michelle Mellion, van *totheletter.nl*, voor het willen verbeteren van het Engelse taalgebruik in dit proefschrift. Laura Schulte, en alle andere personen bij *drukkerij Riezebos*, die het mogelijk hebben gemaakt om mijn proefschrift in boekvorm uit te kunnen brengen. Paul Willemse voor het verzorgen van de opmaak, de kaft, en laatste afwerking van mijn proefschrift.

Ook wil ik al mijn familie en vrienden bedanken voor alle steun en liefde van de afgelopen jaren. Bedankt dat jullie ervoor gezorgd hebben dat mijn leven niet alleen uit mijn proefschrift heeft bestaan! In het bijzonder wil ik mijn ouders bedanken voor hun onvoorwaardelijke steun en liefde van kinds af aan, maar ook Mariska Goudriaan en Ward Steijn die mij op het moment suprême hebben willen bijstaan als mijn paranimfen.

En, last but not least, natuurlijk mijn vrouw Ilja. Zonder jouw liefde en steun was ik nooit zo ver gekomen. Jij was er altijd voor mij om op terug te vallen, vooral ook in de moeilijkeren tijden. Al die keren dat je hebt gezegd dat ik in mijzelf moest geloven heeft er toe geleid dat ik dat ben gaan doen, maar dat was me zonder jou nooit gelukt.

En nu hebben jullie allemaal het resultaat in handen van jaren hard werk: het is me gelukt! Met dank aan jullie allemaal.

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